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System Description

The NEC Express5800™ RM4000 Series is the rack-mount version of the Express5800 line of high performance Pentium® Pro 200MHz server systems. The RM4000 system architecture supports symmetrical multiprocessing (SMP) and popular operating systems including Microsoft Windows® NT and Novell NetWare®. Two central processing unit (CPU) module slots support up to four 200MHz/512KB Pentium® Pro CPUs, and one memory slot with Error Checking and Correcting (ECC) provides up to 1GB of main memory (4-way interleave).

The RM4000 server systems incorporate a modular scaleable architecture that integrates a 64-bit bus interface with a Dual-Peer Peripheral Component Interconnect (PCI) bus and an Extended Industry Standard Architecture (EISA) bus. There are six PCI slots (1st bus 2-slots; 2nd bus 4-slots), and four EISA bus master slots available on each system. The bus interface is capable of handling multiple processors with multiple cache resources in a quad-processor format.

Three standard 5¼" and one 3½" peripheral bays can house optional diskette drives, tape back-up, CD-ROM (one 1.44MB floppy and one 12X CD-ROM are standard on all NEC Express5800™ RM4000 systems), and other mass storage devices. Five 3½" by 1.6" Fast-Wide SCSI drive bays provide over 45 gigabytes (GB) of storage capacity right inside the rack mount system chassis. The drive bays allow for hot-swap of SCSI hard disk drives. Redundant Array of Independent Disks (RAID 0, 1 & 5) are supported on all of the RM4000 systems.

All server systems contain one 600-watt power supply and a second optional 600W redundant power supply is available. The systems chassis can be mounted in an industrial standard 19" Rack-Mount enclosure and it takes 8U (14.0") of vertical rack mount space.

Monitoring and control of the RM4000 servers are provided by NEC Enterprise Server Management (ESM) software. NEC's ESM is provided with all the servers at no additional cost to the customer which manages and monitors the NEC server environment.

NEC's high performance system architecture, Intel Pentium® Pro performance combined with the scalability of the RM4000 and a wide array of inexpensive PCI/EISA options make this system an ideal choice for medium to large enterprise server applications. Typical applications are: enterprise server, departmental/group server, client/server application, network server application, database server application, business critical transaction application and others.

Step 1: Before You Start

In order to help you successfully complete the rack mount configuration process, the following facts and terms will help you get started. It is normal that your initial configurations will take longer to complete. However, with more practice, you will become more proficient in the configuring process of rack-mount systems.

1) A rack-mount frame (also referred to as a cabinet) is the metal enclosure that houses all of the computer systems and associated hardware components. Find out and write down the internal and the external dimensions of the rack-mount frame. You will need to refer to this later.

   The rack frame offered by NEC for the Express5800™ RM4000 is the 19" Rittle rack with 33" depth. It has a total of 73.5" (42U) usable vertical RM space.

   Other 3rd party industrial standard 19" racks may also work on RM4000 servers. But, they are not supported by NEC. Please check the specifications of any 3rd party rack frames carefully before using them.

2) A "U" is a unit of measurement. A U is used to define the *height* of the rack-mounting components. One U equals to 1.75".

3) The Rack-Mount Disk Expansion Unit (DEU) is a NEC optional component used to expand the total system storage capacity. Please refer to ***Step 5b*** for the specifications and details of the NEC Rack-Mount DEU option.

4) You must calculate and determine the amount of space each component occupies. While you are going through this step-by-step configuration guide, write down the rack-mounting space each component requires. This information will be very useful later when you calculate the total space required. Please note the right-most column of each component table in this configuration guide. It indicates the number of Us required for each component. When a N/A (Not Applicable) is present in that column next to a component, it indicates that the particular component either is an "internal" component (such as a PCI/EISA option board or a disk drive) or it is a cable or accessory which does not require any rack-mount space.

5) Unless otherwise noted, all rack-mount systems and components offered by NEC are air cooled with front-to-back air flow. Each BSU, DEU and any heat generating units contain self-sufficient cooling mechanism. As a general rule, no additional cooling options are necessary to support a valid rack configuration.

6) Determining the power requirements (such as power receptacle type, voltage type and rating, current rating, etc.) and the physical requirements (such as foot print, height and weight, etc.) of the rack-mount system is important for the proper site preparation. Depending on your total system requirement and the rack-mount frame you have selected, these requirements vary from configuration to configuration. It is important to communicate these requirements to your service engineers as soon as they are available. It will help to ensure the site is prepared properly before the equipment arrive. Please refer to ***Steps 8 & 9*** for references on the power and physical requirements of your configuration.

7) Installation services are available through NEC authorized service providers. Please refer to ***Step 11*** for details on terms and conditions on installation services provided by NEC authorized service providers. It is recommended that installation service be purchased to ensure a smooth starting-up process.

8) To facilitate ordering, integrating and installing your system, ***Appendix B*** provides a list of recommended (most common) configurations. This list will cover most customer configuration requirements. Please use this list as a reference when possible.

9) The NEC rack-mount servers come with safety features such as the front and rear stabilizer feet, and offers side stabilizer feet safety options. It is always a good practice to take additional safety precautions whenever possible. To ensure better stability, it is highly recommended that heavy components such as the UPS be mounted in the lower section of the cabinet.

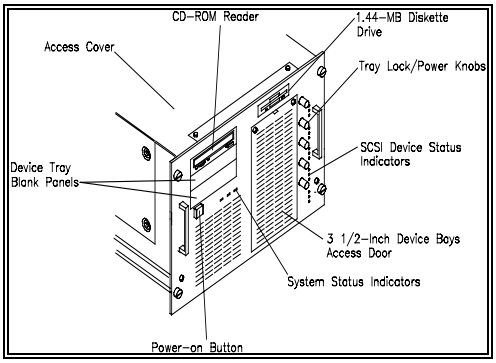
10) It is recommended that the rack-mounting keyboard tray be located no more than 5U away from the BSU. When a concentrator or a keyboard extension cable is used, this 5U requirement does not apply.

11) As a safety measure, always disconnect the power source before servicing the internal components of the rack mount system and options.

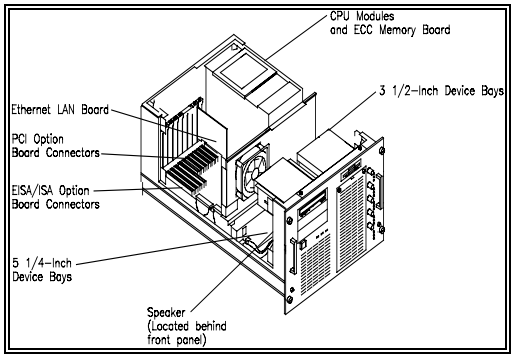
12) When components are mounted in the top portion of the rack, longer power cables (minimum 6') and signal cables may be required - depending the location of the PDU (Power Distribution Unit).

Step 2: Select A NEC Express5800™ RM4000 Series Basic System Unit (BSU)

System BSU - Front View



System BSU - Internal View


CPU Modules and ECC Memory Board
3 1/2-Inch Device Bays
Ethernet LAN Board
PCI Option Board Connectors
EISA/ISA Option Board Connectors
5 1/4-Inch Device Bays
Speaker (Located behind front panel)

The first step in configuring a rack mount NEC Express5800™ RM4000 Series system is to select the Basic System Unit (BSU) and the number of BSUs that will meet your computing requirements. Each BSU is 8U in height. The number of BSUs that can be mounted depends upon the rack-mounted options required and the available space in the cabinet. Each RM4000 BSU includes:

- A slide-mounted, industry standard 19" rack-mount chassis that requires 8U (14.0") of vertical rack space, front-to-rear air cooling
- Two CPU modules (each is capable of housing up to two processors) with at least one Pentium® Pro 200MHz (with 512KB of L2 cache) processor factory installed, upgradeable to four processors for SMP
- One ECC memory module providing up to 1GB of main memory (4-way interleave), 64MB or 128MB factory installed
- Six PCI Bus expansion slots (1st bus with 2 slots and 2nd bus with 4 slots) supporting 265MB/sec. bandwidth
- Four expansion slots for EISA Bus providing 33MB/sec. bandwidth
- Two integrated SCSI-2 (FWS) controller ports for internal drives
- Three 5¼" bays (supporting up to two SCSI devices) and one 3½" bay for floppy, CD-ROM, tape drives and other storage devices

Step 2: Select A NEC Express5800™ RM4000 Series Basic System Unit (Continued…)

- Five hot-swappable SCSI disk drive bays in the system chassis
- Two serial ports with asynch RS232, 9-pin connectors
- One parallel, Centronics, 25-pin, printer port
- One mouse port
- One keyboard port
- One NPC12 port (remote power connection for RM DEU)
- One integrated Super VGA controller with 1MB of Video RAM and graphics accelerator (1024 x 768, 256 colors)
- One factory installed 10/100 Fast Ethernet Card (SMC, requires one PCI slot)
- 12X internal CD ROM drive
- 1.44 MB, 3.5" floppy drive
- One 600-watt power supply with space for a 2nd optional redundant power supply
- Thermal sensor and FAN alarm for system security monitoring
- NEC Enterprise Server Management (ESM)
- Watchdog timer
- Three year limited on-site service warranty
- NetWare certified 3.x and 4.x System Fault Tolerant III (SFT III)
- Windows NT V4.0 certified

Order Number	Configuration	Height
Systems:		
US-7A10-2005	NEC Express5800™ RM4000, 1x200 MHz Pentium® Pro with 512KB cache (Upgradeable to 4 CPUs SMP), 64MB, Floppy Drive, CD-ROM, NIC, ESM.	8U
US-7A10-2009S	NEC Express5800™ RM4000, 1x200 MHz Pentium® Pro with 512KB cache (Upgradeable to 4 CPUs SMP), 128MB, Floppy Drive, CD-ROM, NIC, ESM, RAID.	8U
Power Supply:		
OP-520-74101	Redundant Power Supply for Rack-Mount BSU, 600W	N/A

In order to provide more flexibility in configuring NEC rack-mount server systems, there are no hard disk drives (HDDs) pre-configured with NEC RM4000 systems.

Step 3: Select CPU (Processor) Upgrade Options

The NEC Express5800™ RM4000 Series systems utilize Intel 200MHz/512KB Pentium® Pro processors and supports up to a maximum of four processors per system. Each RM4000 system comes with two factory installed dual-ZIF-Socket CPU modules. Each CPU module will accommodate up

Step 3: Select CPU (Processor) Upgrade Options (Continued…)

to two Pentium® Pro processors (Order No.: OP-430-71105). The systems will support any number (1 through 4) of CPU processor combinations. This provides a simple, convenient and economical way to achieve even higher system performance through SMP upgrades.

Order Number	Description	Height
Processor Upgrades:		
OP-430-71105	Pentium® Pro, 200MHz, 512KB L2 cache, SMP Processor Upgrade for the Express5800 RM4000, Heat Sink, Cooling Fan, Clip, Voltage Regulator	N/A

Step 4: Select Memory Options

Each NEC Express5800™ RM4000 BSU includes a 16-SIMM-socket, ECC memory module factory installed. The memory module supports a maximum of 1GB main memory. There are four memory banks on the memory module and four SIMM memory slots for each memory bank. System memory can be easily upgraded with industry-standard, 70 nanoseconds (ns) SIMMs.

Each BSU comes with four SIMM modules factory installed. The first memory upgrade can be 4 SIMMs. The second memory upgrade **MUST be 8 SIMMs** to support 4-way interleaving in the upper 8 memory slots. The upper eight memory slots must always be populated with SIMMs of the same size. The lower two memory banks (i.e. 4 + 4, lower eight memory slots) can be different SIMM sizes.

Memory Guidelines: Memory requirements for different operating system requirements are heavily dependent upon the type of application being run. Consider application and performance requirements when determining total memory configuration.

Order Number	Description	Height
Memory SIMMs:		
OP-410-40001	64MB (4 x 16MB) SIMM Upgrade Kit	N/A
OP-410-40002	128MB (4 x 32MB) SIMM Memory Upgrade Kit	N/A
OP-410-40003	256MB (4 x 64MB) SIMM Memory Upgrade Kit	N/A
OP-410-33003	64MB (4 x 16MB) SIMM Upgrade Kit (See Note)	N/A
OP-410-71101	128MB (4 x 32MB) SIMM Memory Upgrade Kit (See Note)	N/A
OP-410-71102	256MB (4 x 64MB) SIMM Memory Upgrade Kit (See Note)	N/A

Note: These are shared memory options with the existing RM4000. The inventory of these memory options are limited. Therefore, please use the memory options OP-410-40001, OP-410-40002 & OP-410-40003 as your primary selections when possible.

Step 5: Select Storage Expansion

There are total of nine drive bays in the Express5800™ RM4000 Series rack-mount system chassis. Among them are three 5.25" x 1.6"(H) bays and one 3.5" x 1.0"(H) bay. SCSI devices such as CD-ROM and tape drives are supported in these bays and SCSI connections to these locations are provided by one of the two integrated Fast-Wide SCSI-2 controller. Standard factory installed options such as the floppy diskette drive (FDD) and the 12X CD-ROM occupy the 3.5" bay and one of the three 5.25" drive bays. All drive bays are accessible from the front of the system chassis. The following removable storage device is supported in the 5.25" device bays:

Order Number	Description	Height
Internal Tape Drives:		
OP-230-44101	4/8 GB, 4mm, Single Cartridge, Conner DAT Tape Drive	N/A

The RM4000 Series BSU also has five 3.5" x 1.6"(H) hot-swap hard disk drive (HDD) bays. Therefore, it has storage expansion capabilities by either adding disk drives to the drive bays inside the Rack-Mount BSU (internal storage expansion), or by using a specially designed Rack-Mount DEU (external storage expansion). There are no performance (speed) advantages/disadvantages by selecting either of these expansion methods. However, there are other factors one may wish to consider before making this decision. The following two sections (Sections: 5a & 5b) address the issues for each of these expansion methods.

Step 5a: Internal Storage Expansion for Hard Disk Drives (HDDs)

Each BSU has a total of five (5) 3.5" x 1.6"(H) internal hot-swap hard disk drive (HDD) bays. The SCSI controller used for these hot-swap bays is the integrated Fast-Wide SCSI-2 controller that comes with the system motherboard. RAID 0, 1 & 5 are supported for these bays (software RAID only, OS dependent) via the integrated FW SCSI-2 controller. This provides a simple and economical way of adding hot-swap RAID capability to the basic system configuration. The maximum storage expansion capability on this Fast-Wide SCSI controller is limited by the five available drive bays. This SCSI bus can not be extended beyond the internal five HDD bays. If hardware RAID is desired in these five drive bays, a Mylex RAID controller option can be selected for this purpose. However, this reduces the total number of external storage expansion chassises by one. Due to the limitation of the SCSI cable length, the typical locations of the RM DEU in the cabinet are either immediately above or below the associated BSU (no more than two DEUs above or below the BSU).

The connecting cable to this SCSI bus is NEC factory-installed. The currently supported hard disk drives (HDDs) are 2GB, 4GB and 9GB drives offered by NEC. When RAID is required on this SCSI bus, all drives residing in these five drive bays must be of the same storage capacity - different drive sizes can not be mixed. The following drives can be ordered for the internal storage expansion:

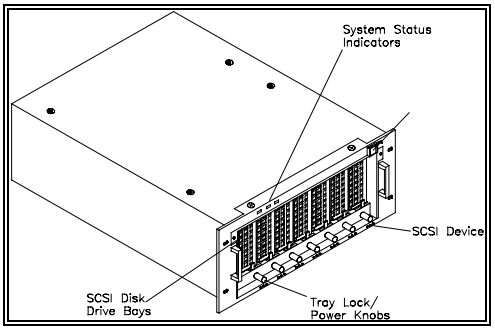
Step 5a: Internal Storage Expansion for Hard Disk Drives (Continued…)

Order Number	Description	Height
Hard Disk Drives:		
OP-220-40001	Seagate ST32171WC, 2GB, SCSI-2, Ultra-Wide, SCA, Hard Disk Drive	N/A
OP-220-40002	Seagate ST34371WC, 4GB, SCSI-2, Ultra-Wide, SCA, Hard Disk Drive	N/A
OP-220-40003	Seagate ST19171WC, 9GB, SCSI-2, Ultra-Wide, SCA, Hard Disk Drive	N/A
OP-220-33002	2GB, SCSI-2, Fast-Wide, SCA, Hard Disk Drive (See Note)	N/A
OP-220-33004	4GB, SCSI-2, Fast-Wide, SCA, Hard Disk Drive (See Note)	N/A
OP-220-33005	9GB, SCSI-2, Fast-Wide, SCA, Hard Disk Drive (See Note)	N/A

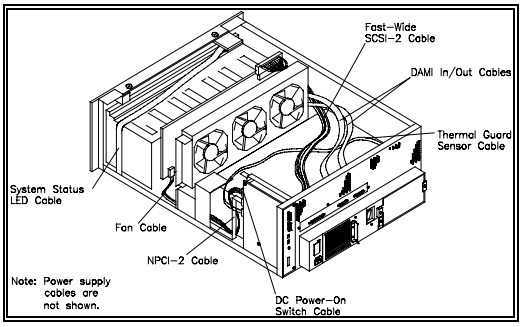
Note: These are shared disk drive options with the existing ProServa SH tower servers. The inventory of these options is limited. Therefore, please use the disk drive options OP-220-40001, OP-220-40002 & OP-220-40003 as your primary selections when possible.

Step 5b: External Storage Expansion for Hard Disk Drives (HDDs)

Disk Expansion Unit (DEU)



Disk Expansion Unit (DEU) - Internal



In addition to the BSU's internal storage capacity, optional external rack-mounted storage expansion enclosures are available. This provides the NEC Express5800™ RM4000 Series systems with high storage capacity expansion capability. Each optional storage expansion enclosure includes seven hot-swappable hard disk drive bays and is capable of housing up to seven high density HDDs. The SCSI bus (back plane) on this rack-mount DEU can not be split into two separate SCSI buses. Optional SCSI controllers are required to support external storage expansion. The NEC PCI-based Ultra-Wide (NEC currently only supports running in Fast-Wide mode, please see "Note" on page 10) SCSI RAID controller provides two independent Ultra-Wide SCSI channels each. A maximum of two (2) RAID controllers are supported per system. Therefore, the maximum number of external storage expansion enclosures supported is four (4) for each RM4000 system. Redundant power supply is supported in the rack-mount DEU as an option.

Step 5b: External Storage Expansion for Hard Disk Drives (Continued…)

The PCI RAID controller offered by NEC has two Ultra-Wide SCSI buses and each SCSI bus supports up to seven hard disk drives. It supports RAID levels 0, 1 and 5. Each RAID controller comes with 4MB of cache memory. Optional cache memory upgrades of 8MB, 16MB or 32MB are also available.

The Fast-Wide SCSI connecting cable to the external storage expansion chassis is included when you purchase this chassis from NEC. The currently supported hard disk drives (HDDs) are 2GB, 4GB and 9GB drives. When RAID is required on this SCSI bus, all drives residing in these seven drive bays must be of the same storage capacity - different drive sizes can not be mixed. The following options can be ordered for the external storage expansion:

Order Number	Description	Height
Device Controllers:		
OP-450-74101	Mylex DAC 960-PDU-2, Ultra-Wide SCSI RAID Controller, 2 Channels, 4MB Cache (Expandable to 32MB Max.), RAID 0, 1 & 5 Supported	N/A
Hard Disk Drives:		N/A
OP-220-40001	Seagate ST32171WC, 2GB, SCSI-2, Ultra-Wide, SCA, Hard Disk Drive	N/A
OP-220-40002	Seagate ST34371WC, 4GB, SCSI-2, Ultra-Wide, SCA, Hard Disk Drive	N/A
OP-220-40003	Seagate ST19171WC, 9GB, SCSI-2, Ultra-Wide, SCA, Hard Disk Drive	N/A
OP-220-33002	2GB, SCSI-2, Fast-Wide, SCA, Hard Disk Drive (See Note)	N/A
OP-220-33004	4GB, SCSI-2, Fast-Wide, SCA, Hard Disk Drive (See Note)	N/A
OP-220-33005	9GB, SCSI-2, Fast-Wide, SCA, Hard Disk Drive (See Note)	N/A
Expansion Enclosure:		
OP-560-74110	Rack-Mount Storage Expansion Unit, 7 hot-swap bays, w/ Cables	5U
OP-560-74110-1	Redundant Power Supply for Rack-Mount DEU, 300-Watt	N/A

Note: These are shared disk drive options with the existing NEC ProServa SH tower systems. The inventory of these options is limited. Therefore, please use the disk drive options OP-220-40001, OP-220-40002 & OP-220-40003 as your primary selections when possible.

The SCSI back plane of the Rack-Mount disk expansion unit does not allow it to be split into two separate SCSI buses.

If you intend to use storage expansion enclosures provided by companies other than NEC, please be sure that your overall SCSI cable length conforms to the maximum cable length standard set forth by IEEE. You should also include the SCSI bus length of the storage enclosure in your calculation of the total SCSI bus length.

Note: The RAID controller offered by NEC provides two Ultra-Wide RAID channels. However, the RM DEU and the SCSI cable connecting the DEU currently only supports Fast-Wide SCSI. Therefore, only Fast-Wide SCSI mode is currently supported when using NEC DEUs.

Step 6: Select PCI/EISA Expansion Options

Each NEC Express5800™ RM4000 Series BSU consists of 10 I/O bus slots - 6 PCI Bus slots plus 4 EISA Bus slots. A variety of NEC and industry standard expansion options are supported. The descriptions of the PCI Bus slots and the EISA Bus slots are as follows:

PCI: Total 6 PCI slots, none shared, supports 4 long-board slots and 2 short-board slots, 32-bit, supporting 132MB/sec. bandwidth

EISA: Total of 4 EISA slots, no Shared, 32-bit, supporting 33MB/sec. bandwidth

One PCI-based 10/100 Fast Ethernet controller card (SMC 9332 BDT) is included with each system. This controller card occupies one of the two short-board PCI slots.

Order Number	Description	Height
Ethernet:		
OP-440-40001	SMC 8432BTA, 10 Base-T, PCI, 1 Channel Ethernet (AUI/BNC/RJ-45)	N/A
OP-440-40002	SMC 8434BT, 10 Base-T, PCI, 2 Channels Ethernet (2 x BNC, 2 x RJ-45)	N/A
OP-440-40003	SMC 9332BDT, 10/100 Ethernet (9-pin UTP, RJ-45)	N/A

Step 7: Select Keyboard, Mouse and Monitor Options

When rack-mounted keyboard and mouse are required, a short keyboard specifically designed for this purpose is recommended. The NEC Express5800™ RM4000 BSUs do not include a keyboard, mouse or monitor. These options must be ordered separately. However, if rack-mounted keyboard, mouse or monitor are not required, standard components (along with extension cables) can be used and these components can be placed on a work table next to the system rack. When mounting components into the rack-mount cabinet, each component requires a certain amount of rack-mount space. This may limit other rack-mount components (such as BSU, DEU, etc.) that you may want to be included in the rack (because of total available rack-mounting space in the cabinet).

The rack-mount concentrator allows for up to four (4) BSUs all connected to a single common monitor, keyboard and mouse. This helps to eliminate the need for a monitor, keyboard & mouse for each system. Therefore, it helps to reduce the amount of rack space necessary when mounting multiple systems in a cabinet.

Each RM4000 BSU comes with a PCI-based integrated 16-bit Super VGA video controller that consists of a graphic accelerator and 1MB of video RAM. The controller supports 1024 x 768 resolution and 256 colors maximum. PCI video boards are supported in the first PCI bus only. PCI video cards are not supported in the second PCI bus.

Step 7: Select Keyboard, Mouse & Monitor Options (Continued…)

Order Number	Description	Height
Monitor:		
See *P&C Manual*	Please refer to the ***PB-NEC P&C Manual*** for ordering information. Monitors up to 17" are supported for mounting inside the RM cabinet. Please remember that larger monitors requires more RM space. Please use the following rough estimates for your reference. 14" Monitor – 15.5" (9U + 1U = 10U) 15" Monitor – 15.5" (9U + 1U = 10U) 17" Monitor – 17.0" (10U + 1U = 11U) Actual RM space required for monitor selected, should be based on the actual measurement taken on the monitor *plus* 1U (for the monitor rack mount tray). Make sure to choose a monitor power cord that is long enough to reach from the bottom of the cabinet to where the monitor to be mounted in the cabinet. (6' or longer power cords are recommended)	9U ***or*** 10U
Keyboard & Mouse:		
OP-100-74101	Keyboard for RM4000, Fit in OP-560-74108	N/A
OP-550-74101	Mouse for RM4000, Fit in OP-560-74108	N/A
Other Options:		
OP-560-74107	Rack-Mount Monitor Tray (for monitor size up to 17"), Monitor Not Included.	1U
OP-560-74108	Rack-Mount Keyboard/Mouse Tray, No Keyboard, No Mouse	2U
OP-560-74109	Rack-Mount Monitor Concentrator, 4-Port, 1U	1U
OP-560-74109-1	BSU to Rack-Mount Concentrator Cable for OP-560-74109, 7.0'	N/A
OP-560-74109-2	BSU to Rack-Mount Concentrator Cable for OP-560-74109, 12.0'	N/A
OP-560-74109-3	Extension Cable Set, 12.0' (See Note Below)	N/A

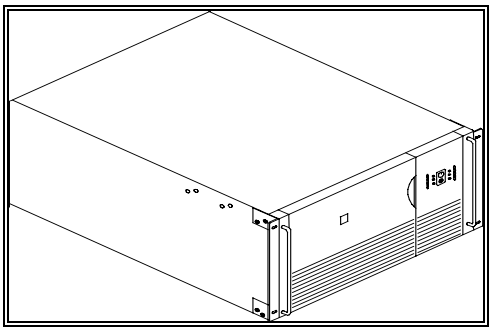
Note: The extension cable set can be used in either one of the following two situations:

a. Extending the cable length between monitor/keyboard/mouse and the concentrator. This is desirable when the rack mount configuration requires the monitor, keyboard and mouse to be used outside of the rack-mount frame.

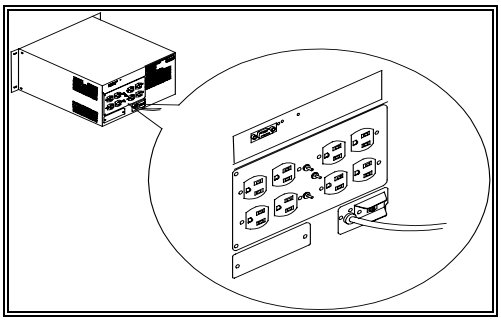
b. Extending the cable between the BSU and the concentrator. This is useful under rare situations where cable routing demands for more than the standard 12' length.

Step 8: Power Distribution Options

Rack Mount UPS - Front View



Rack Mount UPS - Rear View



Unexpected power interruptions do happen and often at times when you can least afford them. This is why an uninterruptable power supply (UPS) is important for servers being used for business critical applications. A rack-mount, 3,000VA (3KVA) intelligent uninterruptable power supply ("Intelligent UPS" or "Smart UPS") is available from NEC as an option. The intelligent UPS has 3 "smart outlets" and 5 regular outlets. The Powerchute software available for this UPS support up to 3 devices connected to the UPS for automatic power down notification. The table below lists the UPS option offered by NEC. The UPS should always be mounted at the bottom of the rack-mount cabinet for stability. The UPS option offered by NEC has the following specifications:

UPS:	Input Voltage:	120VAC
	Input Current:	24A
	Input Plug:	NEMA L5-30P, Qty. = 1
	Output Voltage:	120VAC
	Output Current:	15A (per outlet)
	Output Receptacle:	NEMA 5-15R, Qty. = 8 (3 Smart outlets, 5 regular outlets)

When UPS is not necessary in the configuration, the user can choose one (or two for redundancy) lower cost power distribution unit(s) (PDU) instead. It is highly recommended that two (2) PDUs are ordered for each rack frame. The reasons for having the two independent PDUs are first for redundancy and second for load-sharing. The power distribution unit option offered by NEC has the following specifications:

PDU:	Input Voltage:	120VAC
	Input Current:	24A
	Input Plug:	NEMA L5-30P, Qty. = 1
	Output Voltage:	120VAC
	Output Current:	15A (per outlet)
	Output Receptacle:	NEMA 5-15R, Qty. = 10

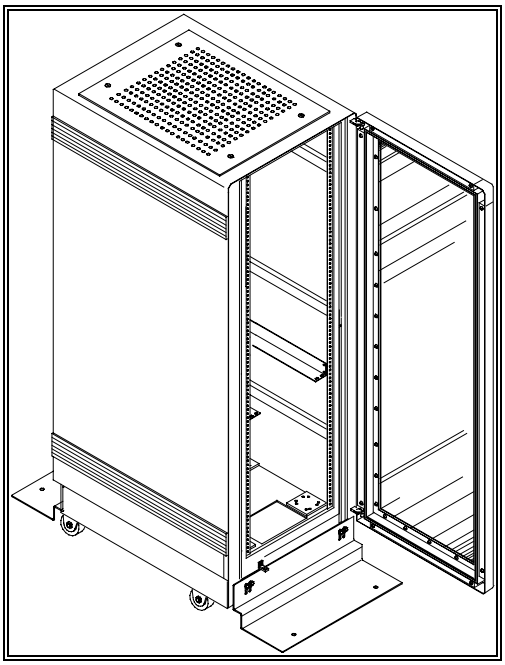
Order Number	Description	Height
Rack-Mount UPS:		
OP-520-74102	NEC Rack-Mount Intelligent UPS, 3KVA, w/ PowerChute	6U
OP-520-74103	120VAC, 24A Power Distribution Unit, One NEMA L5-30P Input, Ten NEMA 5-15R Outputs	2U (See Note)

Step 8: Power Distribution Options (Continued…)

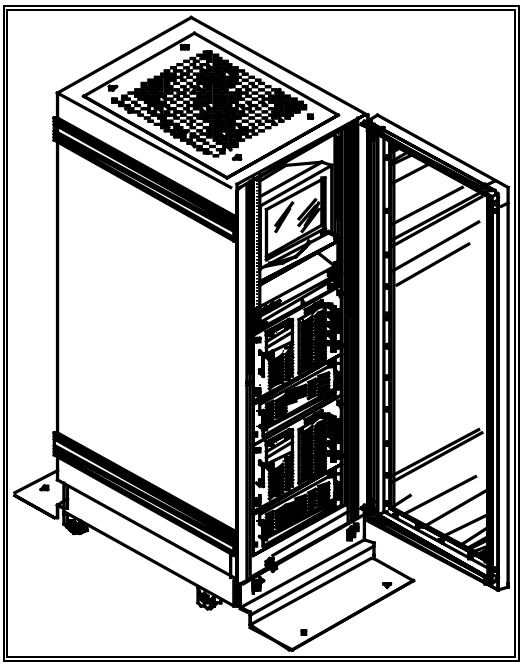
Note: The PDU will require 2U of rack mount space and requires a 2U filler panel - unless it is mounted behind the rack-mount tray for the keyboard & mouse. In which case, no additional rack mount space is taken by the PDU.

Step 9: Select Rack-Mount Frame (Cabinet)

Empty Rack Frame (Cabinet)



Loaded Rack Frame (Cabinet)



The rack-mount frame option supplied by NEC does NOT come with any power distribution units. This provides the user the flexibility of selecting either a rack-mounted uninterruptable power supply (UPS) or lower cost options such as the power distribution unit (PDU), when UPS is not needed.

The NEC Rack-Mount cabinet also offers the following features:

- Industry standard 19” width
- 42U (73.5”) vertical usable rack-mounting space
- 30” in usable depth
- Vented top
- Lockable smoked glass door in the front
- Lockable vented metal door in the rear
- Removable side panels
- Front and rear stabilizing feet

Step 9: Select Rack-Mount Frame (Continued…)

- Optional side stabilizing feet
- Optional filler panels of various sizes
- Optional cabinet joiner kit that allows for multiple cabinets to be joint side-by-side as needed

The following options can be ordered:

Order Number	Description	Height
Cabinet & Options:		
OP-560-74101	19" rack-mount frame, 42U	42U
OP-560-74111	Two-Side Stabilizing Feet	N/A
OP-560-74103	Blank Rack Filler Panel, Qty. 2	1U
OP-560-74104	Blank Rack Filler Panel, Qty. 2	2U
OP-560-74105	Blank Rack Filler Panel, Qty. 2	3U
OP-560-74106	Blank Rack Filler Panel, Qty. 2	6U
OP-560-74102	Rack-Mount frame link kit for OP-560-74101	N/A

Step 10: Software

The following software components are supported on NEC Express5800™ RM4000 Series systems:

- Microsoft DOS 6.22 or later
- Microsoft Windows NT 4.0
- Novell NetWare v3.12, v4.1 & v4.11
- Intel LANDesk Management Suit V2.5
- Intel LANDesk Work Group Manager for NT V1.0
- ESM Modified Adaptec SCSI Driver for Novell NetWare® 3.x, 4.x
- ESM Modified Mylex RAID Driver

Step 11: Services

Every Express5800™ RM4000 Series system offered by NEC includes a standard 3-Year on-site service warranty with eight-hour response time. A Four-hour response time service upgrade is optional and available for an additional cost from NEC authorized service providers.

System integration and installation service at the end-user site is not included in the system purchase price. However, this service can be purchased from NEC at an incremental cost. Due to the relatively complex nature of rack mounted systems, it is highly recommended that this optional service is purchased. It will help to ensure a smoother installation process and a smoother start-up. The following requirements regarding services should be met:

Step 11: Services (Continued…)

1. Installation services will only be performed during normal business hours (Monday through Friday, 9AM through 5PM). Please consult with your NEC sales representatives if after-hour installation services are required.
2. Installation services must be scheduled at least 7 working days in advance. And, installation site must be within 50 miles of a NEC service location.
3. All necessary hardware must be at the customer location, in the room where installation will take place. Partial shipments will not be installed.
4. All necessary hardware must be accessible to the authorized installation service personnel.
5. Site preparations must be completed before the installation service begins.
6. The rack frame must be positioned in its final location and unpacked before installation service can be performed.
7. Hard disk RAID array configuration preferences are highly application dependent, the NEC installation services will not cover RAID configurations. However, the service personnel will run through a checklist which includes verifying the disk drives are properly installed and properly attached to the RAID controller. If the end-user requires assistance in determining the best RAID configuration that suits the applications, a toll-free number (1-800-325-5500) is provided by NEC for technical assistance.
8. Network operating systems installation will not be covered by this service.
9. NEC installation services will only cover NEC Express5800™ RM4000 BSUs and options installed in NEC racks. Installation of NEC equipment into any none NEC racks are not currently supported. Please consult with your NEC sales representatives if such services are required.

The following table lists the installation services available. Each service item covers only quantity one of the components described. When multiple components are configured, multiple number of service options have to be ordered accordingly.

Order Number	Description
Service:	
SV-RMS-00001	Basic Installation Service, Includes: 1 Frame, 1 Monitor, 1 Keyboard/Mouse, 1 Concentrator, 2 PDUs, Filler Panels, 1 Link Kit and Stabilizer Feet
SV-RMS-00002	BSU Add-On with Basic Installation Service, 1 BSU & Associated Options
SV-RMS-00003	DEU Add-On with Basic Installation Service, 1 DEU & Associated HDDs
SV-RMS-00004	UPS Add-On with Basic Installation Service, 1 UPS
SV-RMS-00005	Post Installation Service, BSU, DEU or UPS Add-On's, Per Item

Appendix A

Related Documentation

Document Description	NEC Document Number	BPCS Number
Basic System Unit:		
Release Notes	819-181625-000	903901
Getting Started Sheet	819-181626-000	101755
Setup Guide	819-181630-000	101826
Users & Service Guide	819-181641-000	101761
NT Configuration Guide	819-181628-000	903902
NetWare Configuration Guide	819-181629-000	101821
Disk Expansion Unit:		
Setup Guide	819-181631-000	903903
Users and Service Guide	819-181632-000	101824
System Rack:		
Users and Services Guide	819-181624-000	903924
Option (Installation) Guides:		
SMC 9432 PCI Ethernet LAN Board (Single Channels)	819-181638-000	903913
RAID Board (Mylex DAC 960PDU-2)	819-181643-000	101822
Rack Frame Link Kit	819-181644-000	903945
Rack Frame Blank Panels (Four Sizes)	819-181646-000	903947
Rack-Mount Keyboard Tray	819-181647-000	101823
Rack-Mount Monitor Tray	819-181648-000	903939
Rack-Mount Concentrator (Monitor)	819-181650-000	903948
Redundant Power Supplies	819-181653-000	903951
Rack-Mount Intelligent UPS	819-181645-000	903946

Appendix B

NEC Express5800™ RM4000 Series Cabinet Configuration Table

(24 Most Common Rack Configurations)

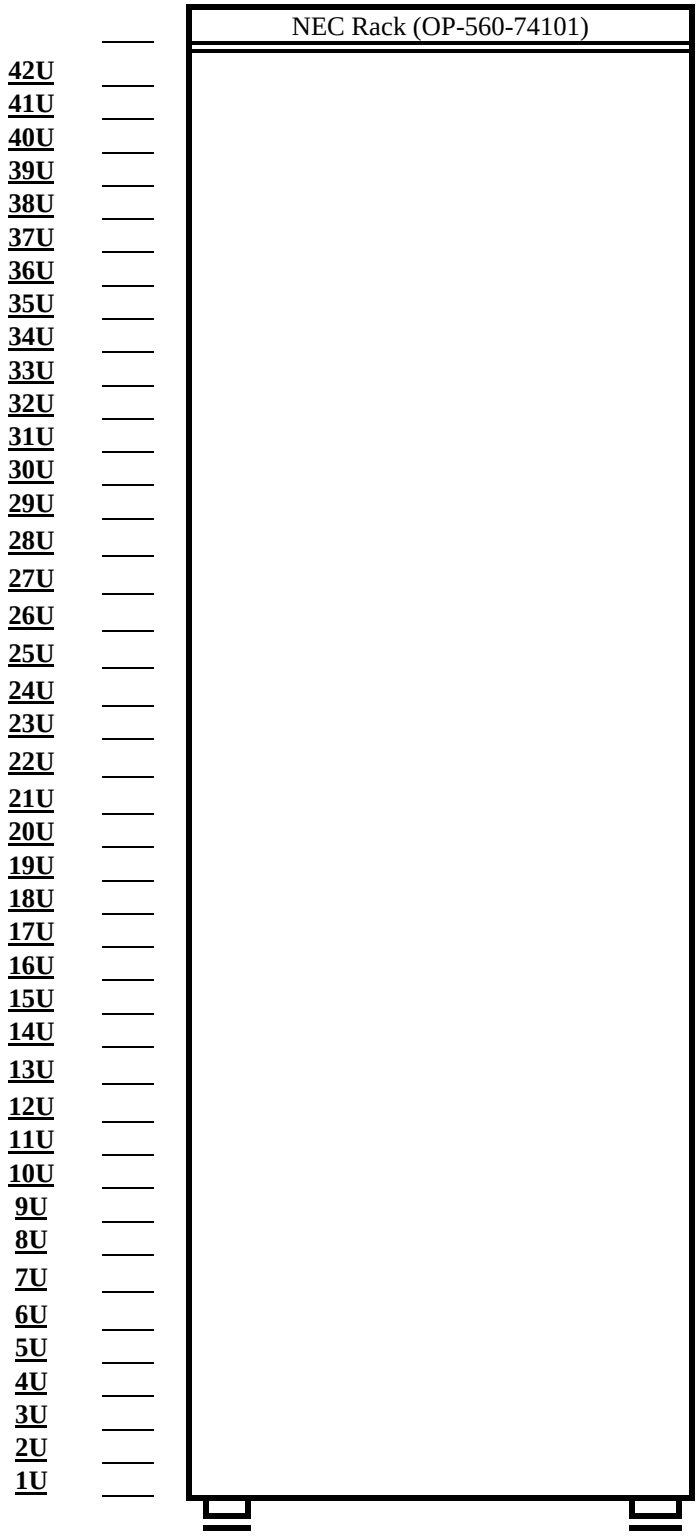
	Total Space in Us		Key Rack Mount Components							4-Port Concentrator Cables			Filler Panels			
Figure Number	**RM Space Req'd**	**RM Space Rem.**	**UPS (6U)**	**PDU (2U)**	**BSU (8U)**	**DEU (5U)**	**KBD Tray (2U)**	**Mon. Tray (11U)**	**4-Port Conc. (1U)**	**7' cable 560-74109-1**	**12' cable 560-74109-3**	**12' Ext cable 560-74109-3**	**1 U**	**2 U**	**3 U**	**6 U**
Figure 1	23U	19U	0	1	1	0	1	1	0	0	0	0	2	2	1	2
Figure 2	24U	18U	0	1	1	0	1	1	1	1	0	0	1	2	1	2
Figure 3	27U	15U	1	0	1	0	1	1	0	0	0	0	2	2	1	1
Figure 4	28U	14U	1	0	1	0	1	1	1	1	0	0	0	1	0	2
Figure 5	28U	14U	0	1	1	1	1	1	0	0	0	0	2	1	0	2
Figure 6	29U	13U	0	1	1	1	1	1	1	1	0	0	1	1	0	2
Figure 7	32U	10U	1	0	1	1	1	1	0	0	0	0	1	0	1	1
Figure 8	33U	9U	1	0	1	1	1	1	1	1	0	0	1	1	0	1
Figure 9	31U	11U	0	1	1	2	1	1	0	0	0	0	1	2	0	1
Figure 10	32U	10U	0	1	1	2	1	1	1	1	0	0	0	2	0	1
Figure 11	37U	5U	1	0	1	2	1	1	0	0	0	0	1	2	0	0
Figure 12	38U	4U	1	0	1	2	1	1	1	1	0	0	0	2	0	0
Figure 13	36U	6U	0	1	1	3	1	1	0	0	0	0	1	1	1	0
Figure 14	37U	5U	0	1	1	3	1	1	1	1	0	0	0	1	1	0
Figure 15	42U	0U	1	0	1	3	1	1	0	0	0	0	0	0	0	0
Figure 16	42U	0U	1	0	1	3	1	1	1	1	0	0	0	0	0	0
Figure 17	41U	1U	0	1	1	4	1	1	0	0	0	0	1	0	0	0
Figure 18	42U	0U	0	1	1	4	1	1	1	1	0	0	0	0	0	0
Figure 19	32U	10U	0	1	2	0	1	1	1	1	1	0	0	3	0	1
Figure 20	36U	6U	1	0	2	0	1	1	1	1	1	0	1	1	1	0
Figure 21	37U	5U	0	1	2	1	1	1	1	1	1	0	1	3	0	0
Figure 22	41U	1U	1	0	2	1	1	1	1	1	1	0	1	0	0	0
Figure 23	42U	0U	0	1	2	2	1	1	1	1	1	0	0	1	0	0
Figure 24	42U	0U	0	1	3	1	1	1	1	1	2	0	0	0	0	0

Important Notes:

1. Please refer to *Figure 1* through *Figure 24* for details and diagrams of the associated configurations.
2. For configurations not covered by this table, "customized" configurations or multiple-cabinet configurations, please consult with NEC sales support or NEC authorized rack-mount system resellers for assistance.
3. For configurations that require the monitor and keyboard/mouse to be located outside of the rack-mount cabinet, make sure that the 12ft keyboard/mouse/video extension cable is ordered.

Appendix C

NEC Rack-Mount Server Cabinet Configuration Work Sheet



Notes:

1. Make sure the total space required by all components does not exceed 42U, or, multiple rack-mount cabinets may be needed.
2. Multiple BSU and/or DEU can be configured into the same cabinet.
3. Heavy components (such as the UPS, DEU, BSU, etc.) should always be mounted at the lower portion of the rack-mount cabinet.
4. Unused rack space can be covered-up with blank filler panels.
5. Consult the Configuration Guide for product specification details.

Monitor RM Kit (1U)

4-Port Concentrator (1U)

Kbd/Mntr RM Kit (2U)
(OP-560-74108)

NEC Express5800™ RM4000
Basic System Unit (BSU)
8U
(US-7A10-200**)

NEC Disk Expansion Unit
5U
(OP-560-74110)

Rack-Mount UPS
6U
(OP-520-74102)

Appendix D
Quick Configuration Check-off List

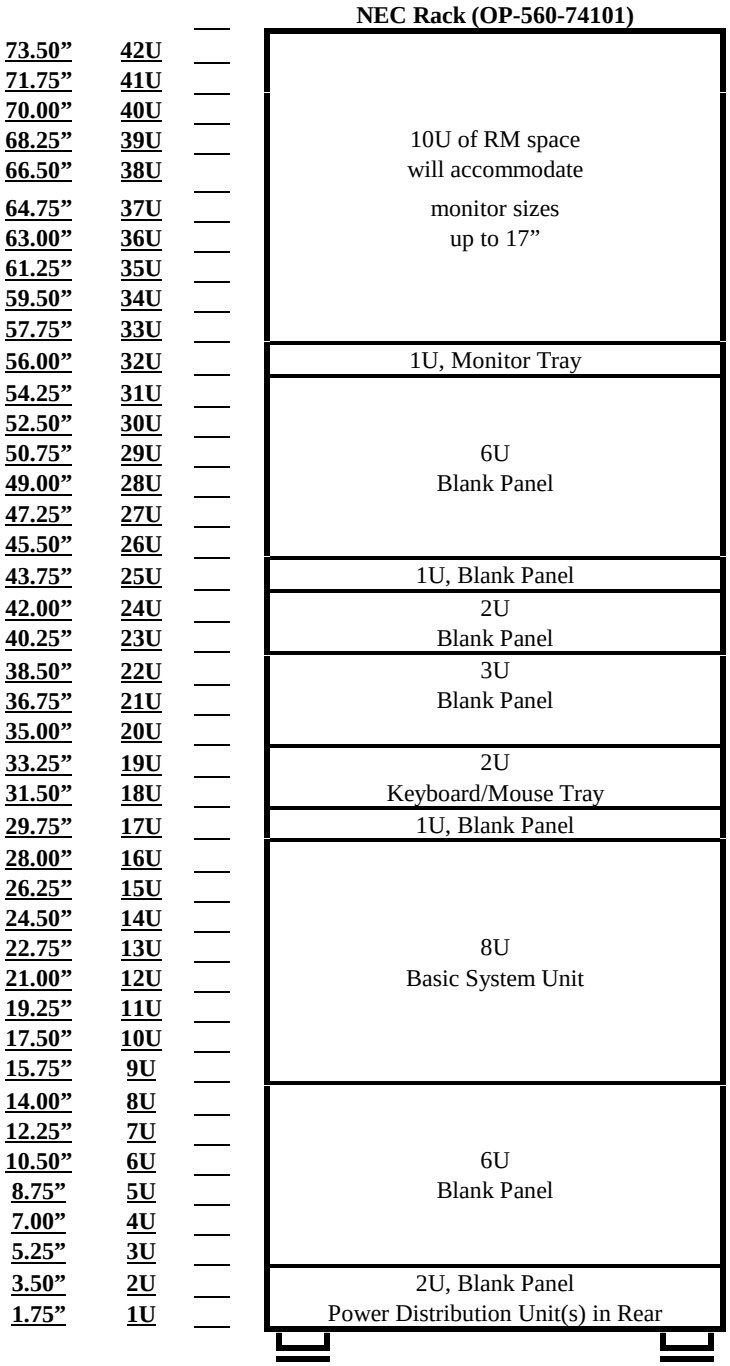
Please use this list to verify the completeness of your rack-mount configuration.

1. Did you choose basic system units (BSU)? How many?
2. Do you need redundant power supply for your BSU?
3. Did you choose additional CPU (processor) upgrade kits?
4. Did you choose memory upgrades? Did you follow the memory upgrade rules (***Step 4***)?
5. Did you choose any necessary I/O options?
6. Did you choose disk drives to be used in the BSU internal bays?
7. Did you choose disk expansion units? How many?
8. Do you need redundant power supply for your DEU?
9. Do you have enough RAID controller(s) for your disk expansion units (***Step 5b***)?
10. If you want to rack-mount your keyboard and mouse, did you choose a keyboard/mouse rack-mount tray?
11. Did you choose a keyboard and a mouse for your configuration?
12. If you want to rack-mount your monitor, did you choose a monitor rack-mount tray?
13. Did you choose a monitor that is 17" or smaller in size?
14. Did you choose a monitor power cord that is at least 3 meter in length?
15. Do you need a 4-port concentrator? If so, did you choose one?
16. Did you choose the proper cables (7' or 12') to connect the BSUs (one per BSU) to this concentrator?
17. What is the total (vertical) rack-mount space required for your configuration? Can it all fit into one cabinet (42U)?
18. Did you choose a cabinet for your configuration? Do you need multiple cabinets?
19. Did you choose a UPS or a power distribution unit (PDU) for your cabinet? Do you need redundancy for your PDU (i.e. did you order two PDUs)?
20. How much (how many Us of) unused rack space is left in your cabinet(s)?
21. Did you order the proper blank filler panels to cover these spaces? (***Step 9***)
22. If you have multiple cabinets, do you need cabinet link kit(s)?
23. Do you need cabinet side stabilizer feet?
24. Did you compare your configuration with the "Recommended Configuration List"?
25. Did you order installation services from NEC? Do you need it? If so, ask your customer to schedule the installation service early. (See ***Step 11***)
26. Did you prepare the "site preparation requirements (i.e. voltage, current, plug type, quantity, physical dimensions, etc., see ***Step 1***)" information for your customer?
27. Did you inform your customer that site preparation must be complete before installation service can begin?

Configuration Diagrams (24 Recommended)

Figure 1

Config.	Total Space in Us		PDU	BSU	DEU	Keyboard Tray	Monitor Tray	4-Port Conc.
	Required	Remaining	2U	8U	5U	2U	11U	1U
Figure 1	23	19	1	1	0	1	1	0

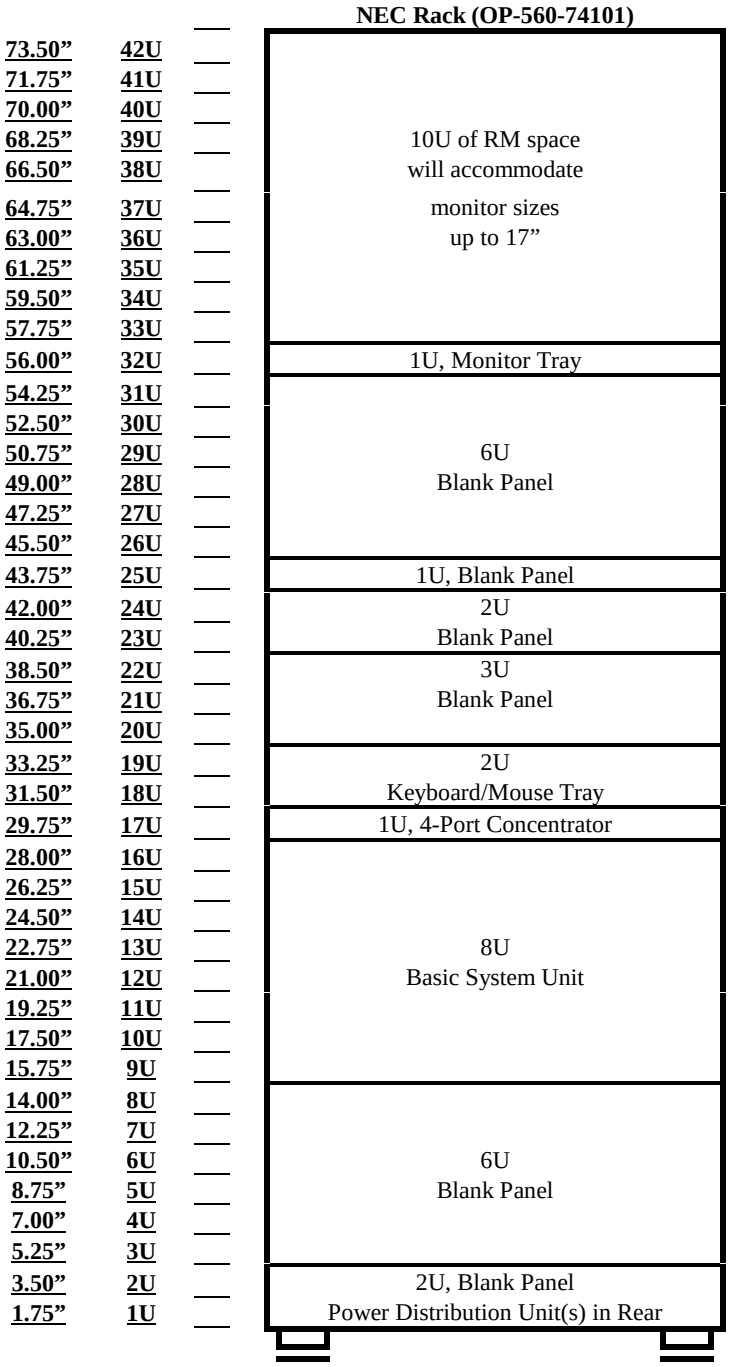


Key RM Component List

Part Number	Qty.
US-7A10-2005/2009S	1
OP-560-74107	1
OP-560-74108	1
OP-520-74103	1
OP-560-74101	1
OP-560-74106	2
OP-560-74105	1
OP-560-74104	2
OP-560-74103	2

Figure 2

Config.	Total Space in Us		PDU	BSU	DEU	Keyboard Tray	Monitor Tray	4-Port Conc.
	Required	Remaining	2U	8U	5U	2U	11U	1U
Figure 2	24	18	1	1	0	1	1	1

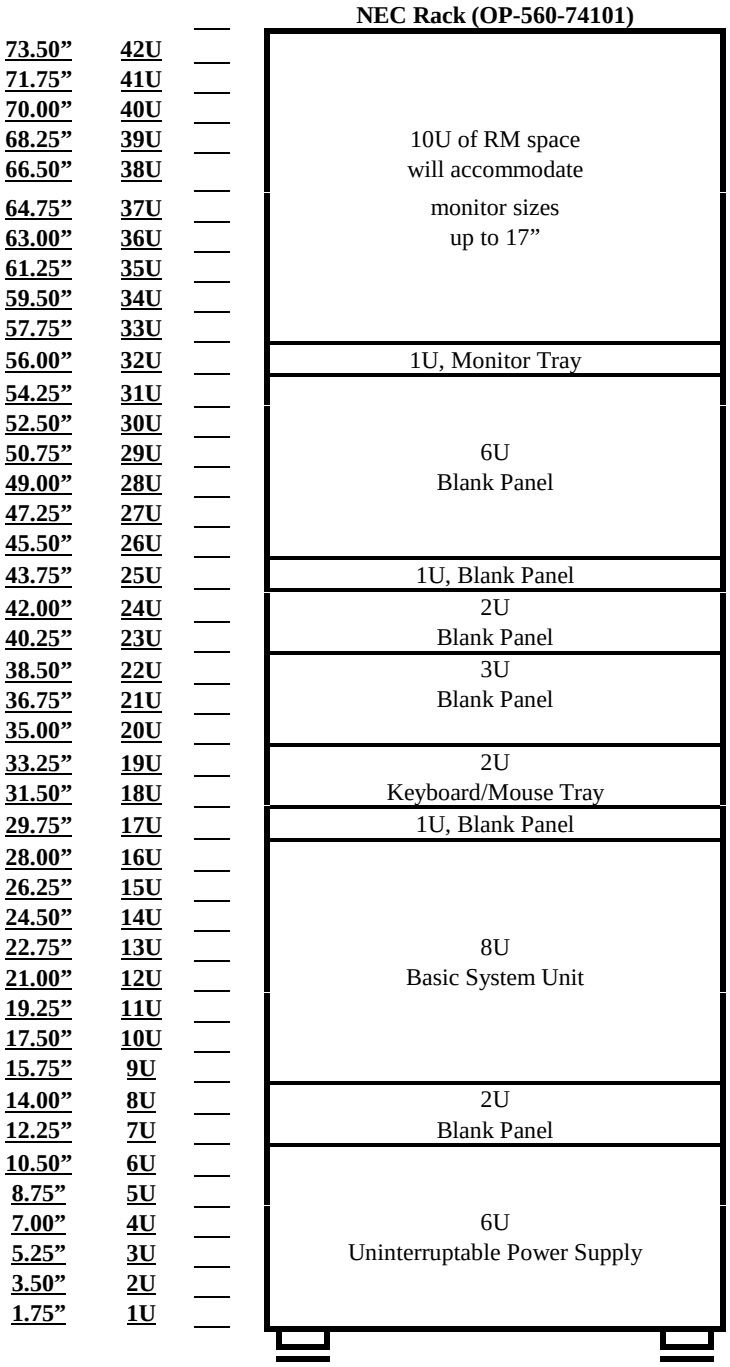


Key RM Component List

Part Number	Qty.
US-7A10-2005/2009S	1
OP-560-74107	1
OP-560-74108	1
OP-520-74103	1
OP-560-74109	1
OP-560-74101	1
OP-560-74106	2
OP-560-74105	1
OP-560-74104	2
OP-560-74103	1

Figure 3

Config.	Total Space in Us		UPS	BSU	DEU	Keyboard Tray	Monitor Tray	4-Port Conc.
	Required	Remaining	6U	8U	5U	2U	11U	1U
Figure 3	27	15	1	1	0	1	1	0

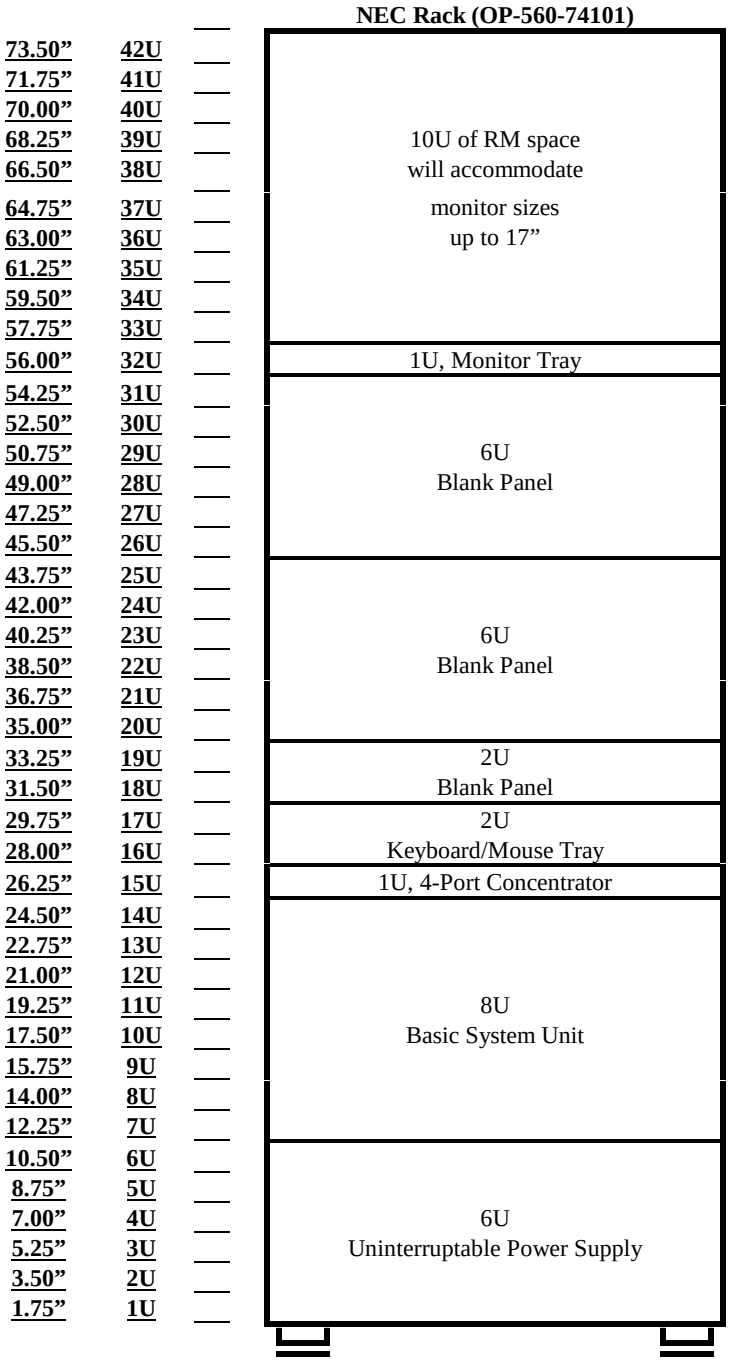


Key RM Component List

Part Number	Qty.
US-7A10-2005/2009S	1
OP-560-74107	1
OP-560-74108	1
OP-520-74102	1
OP-560-74101	1
OP-560-74106	1
OP-560-74105	1
OP-560-74104	2
OP-560-74103	2

Figure 4

Config.	Total Space in Us		UPS	BSU	DEU	Keyboard Tray	Monitor Tray	4-Port Conc.
	Required	Remaining	6U	8U	5U	2U	11U	1U
Figure 4	28	14	1	1	0	1	1	1

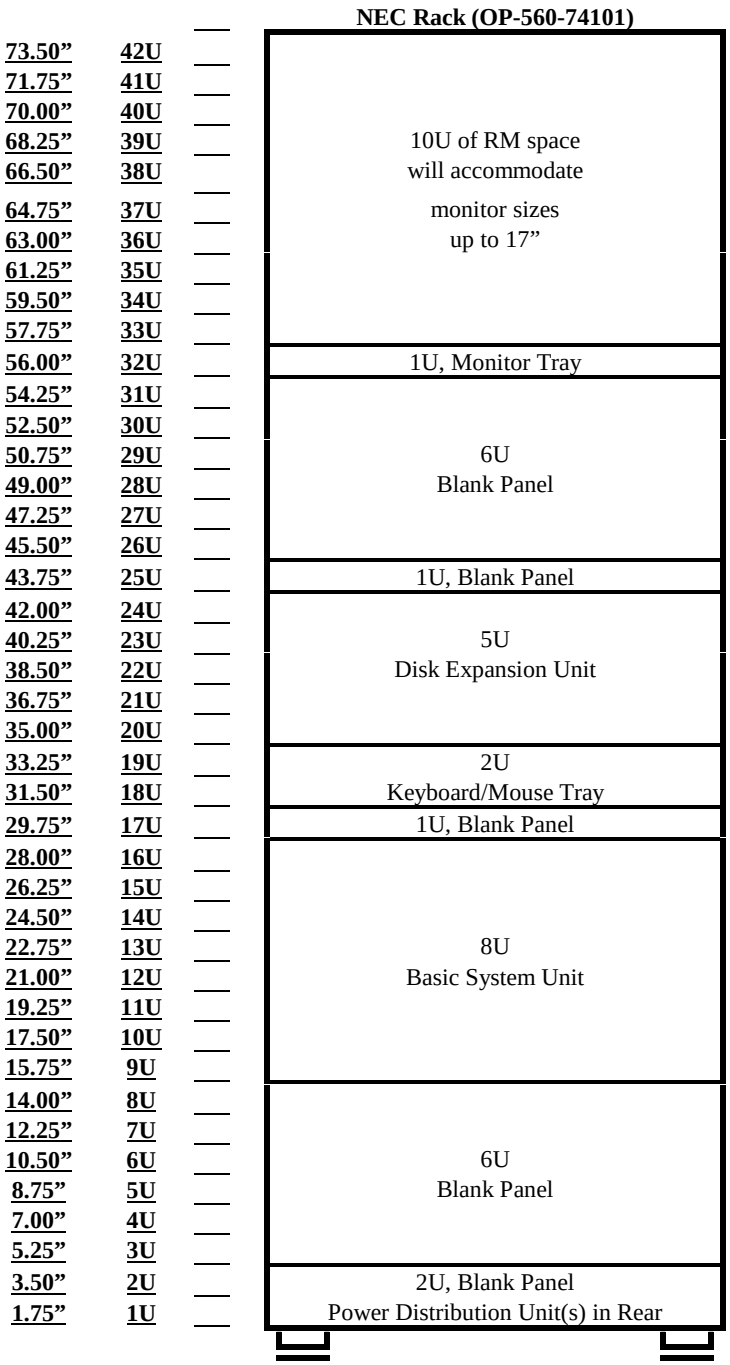


Key RM Component List

Part Number	Qty.
US-7A10-2005/2009S	1
OP-560-74107	1
OP-560-74108	1
OP-520-74102	1
OP-560-74101	1
OP-560-74106	2
OP-560-74104	1

Figure 5

Config.	Total Space in Us		PDU	BSU	DEU	Keyboard Tray	Monitor Tray	4-Port Conc.
	Required	Remaining	2U	8U	5U	2U	11U	1U
Figure 5	28	14	1	1	1	1	1	0

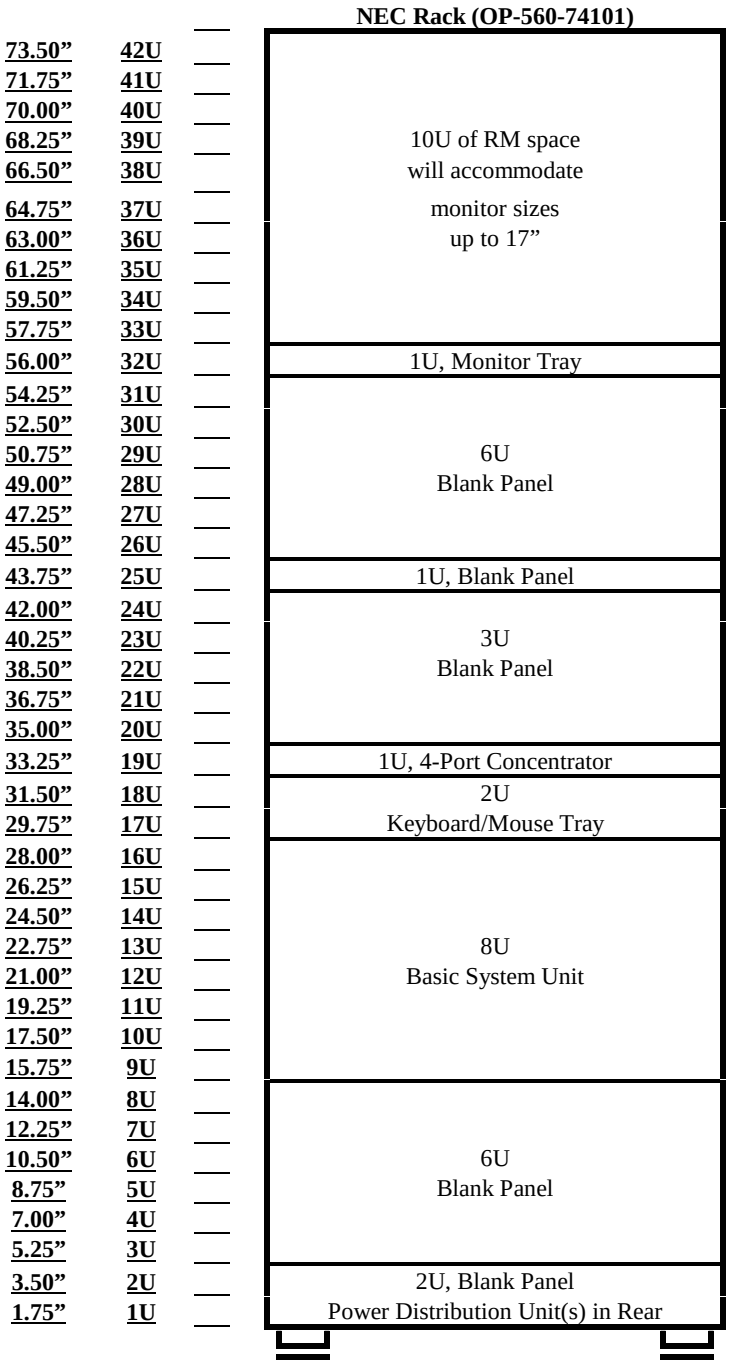


Key RM Component List

Part Number	Qty.
US-7A10-2005/2009S	1
OP-560-74107	1
OP-560-74108	1
OP-520-74103	1
OP-560-74101	1
OP-560-74110	1
OP-560-74106	2
OP-560-74104	1
OP-560-74103	2

Figure 6

Config.	Total Space in Us		PDU	BSU	DEU	Keyboard Tray	Monitor Tray	4-Port Conc.
	Required	Remaining	2U	8U	5U	2U	11U	1U
Figure 6	29	13	1	1	1	1	1	1

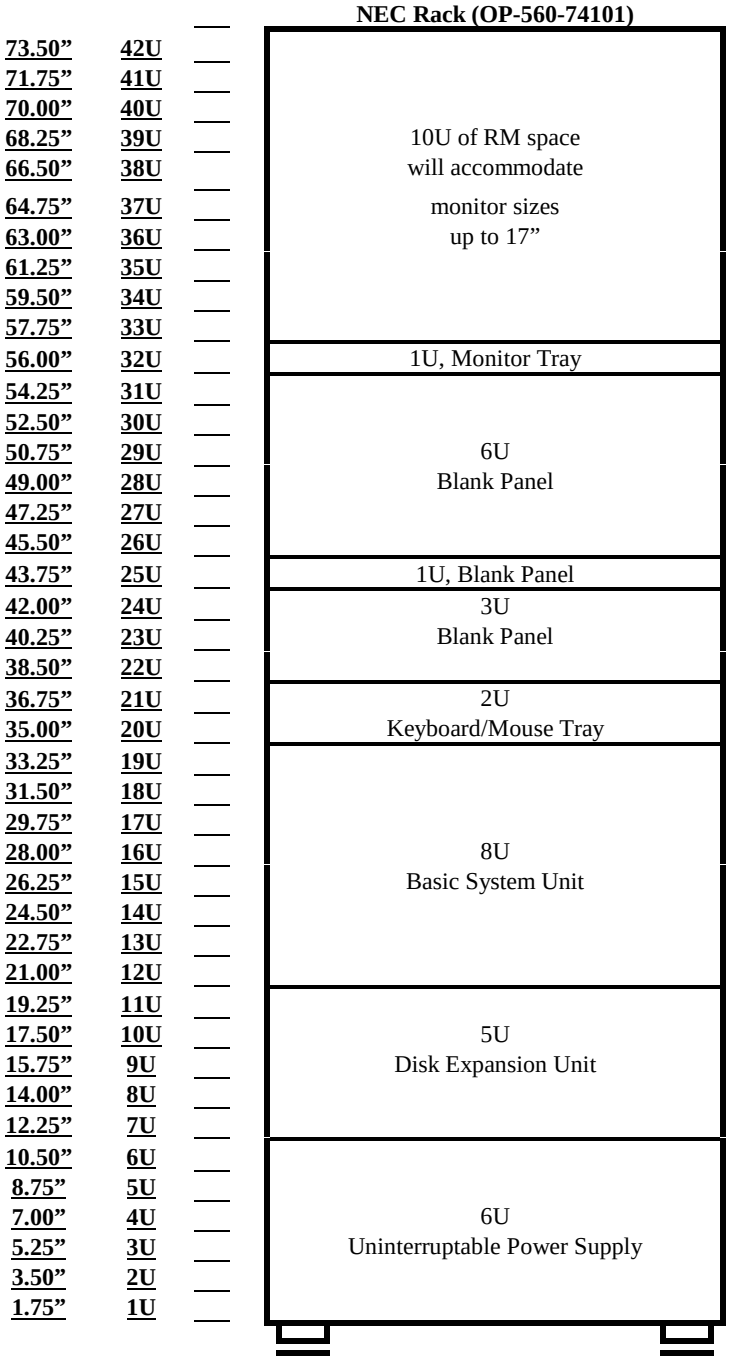


Key RM Component List

Part Number	Qty.
US-7A10-2005/2009S	1
OP-560-74107	1
OP-560-74108	1
OP-520-74103	1
OP-560-74101	1
OP-560-74109	1
OP-560-74110	1
OP-560-74106	2
OP-560-74104	1
OP-560-74103	1

Figure 7

Config.	Total Space in Us		UPS	BSU	DEU	Keyboard Tray	Monitor Tray	4-Port Conc.
	Required	Remaining	6U	8U	5U	2U	11U	1U
Figure 7	32	10	1	1	1	1	1	0

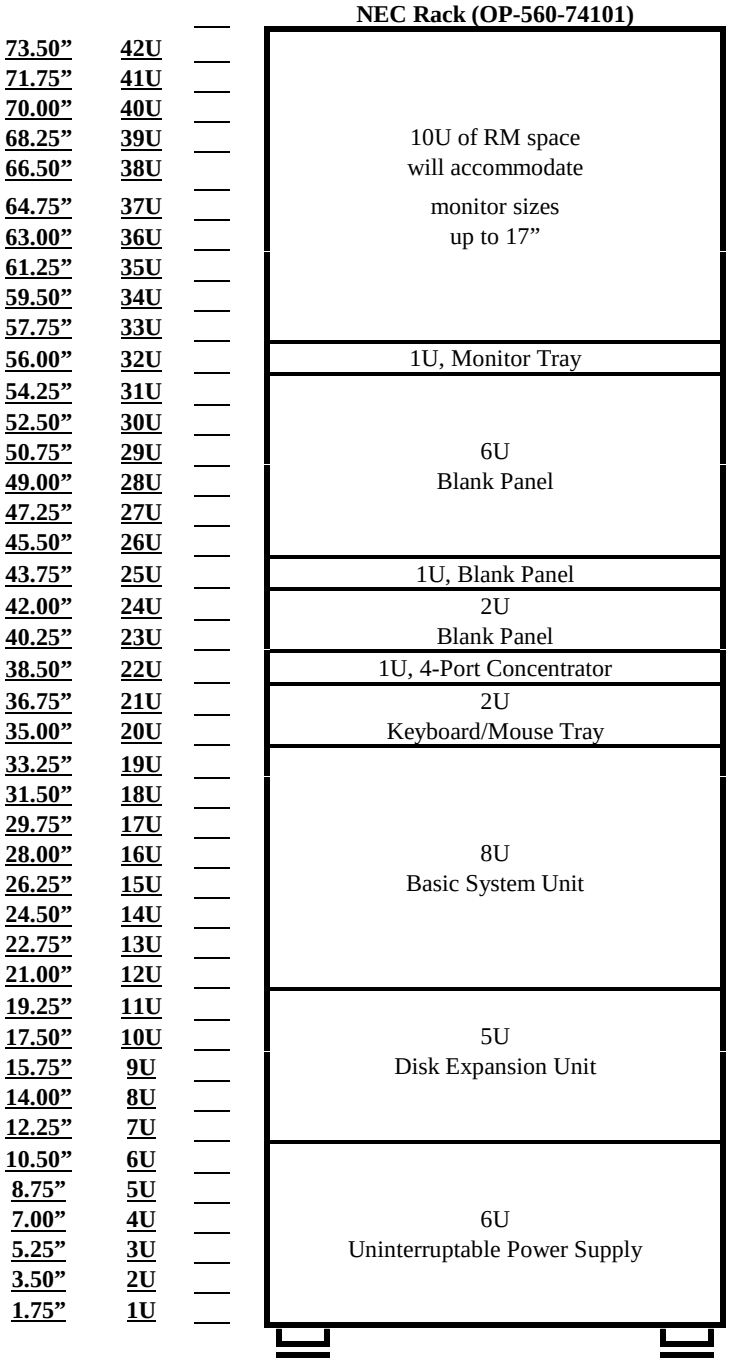


Key RM Component List

Part Number	Qty.
US-7A10-2005/2009S	1
OP-560-74107	1
OP-560-74108	1
OP-520-74102	1
OP-560-74101	1
OP-560-74106	1
OP-560-74105	1
OP-560-74103	1
OP-560-74110	1

Figure 8

Config.	Total Space in Us		UPS	BSU	DEU	Keyboard Tray	Monitor Tray	4-Port Conc.
	Required	Remaining	6U	8U	5U	2U	11U	1U
Figure 8	33	9	1	1	1	1	1	1

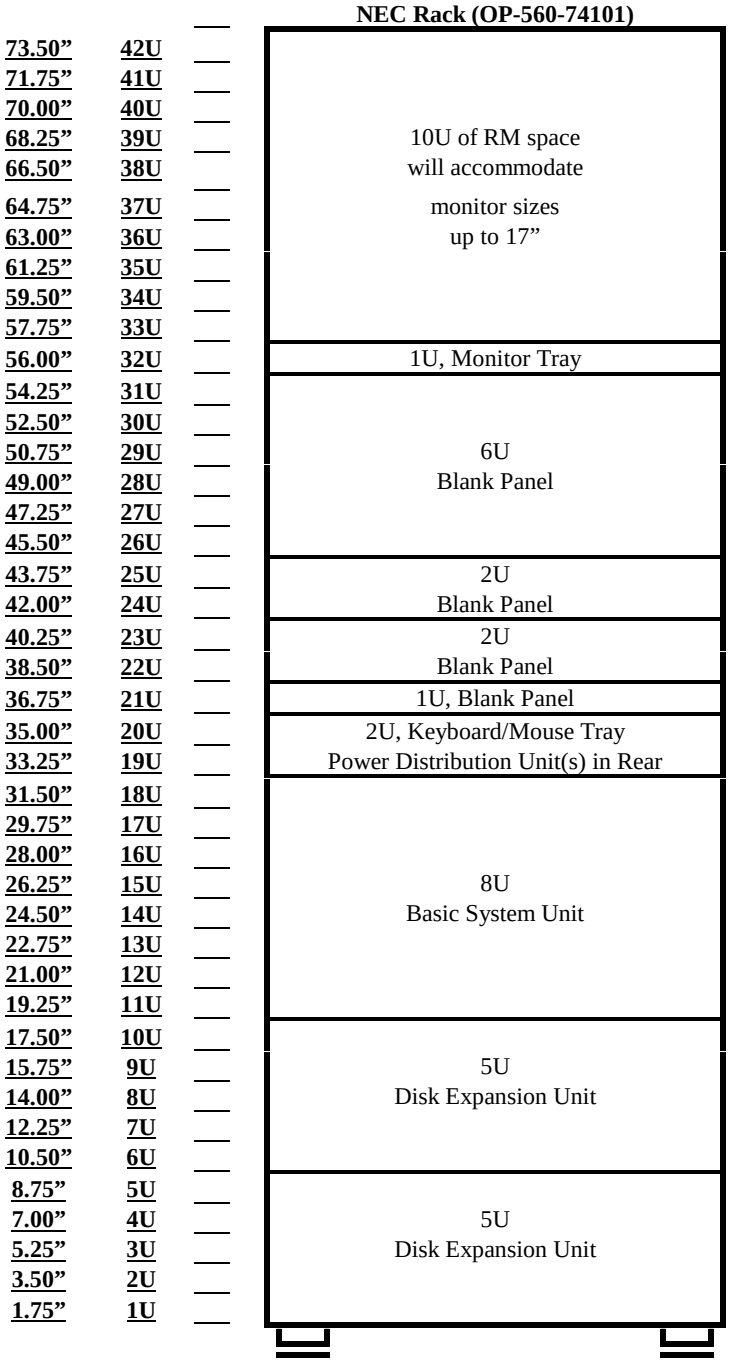


Key RM Component List

Part Number	Qty.
US-7A10-2005/2009S	1
OP-560-74107	1
OP-560-74108	1
OP-520-74102	1
OP-560-74101	1
OP-560-74106	1
OP-560-74104	1
OP-560-74103	1
OP-560-74110	1
OP-560-74109	1

Figure 9

Config.	Total Space in Us		PDU	BSU	DEU	Keyboard Tray	Monitor Tray	4-Port Conc.
	Required	Remaining	2U	8U	5U	2U	11U	1U
Figure 9	31	11	1	1	2	1	1	0

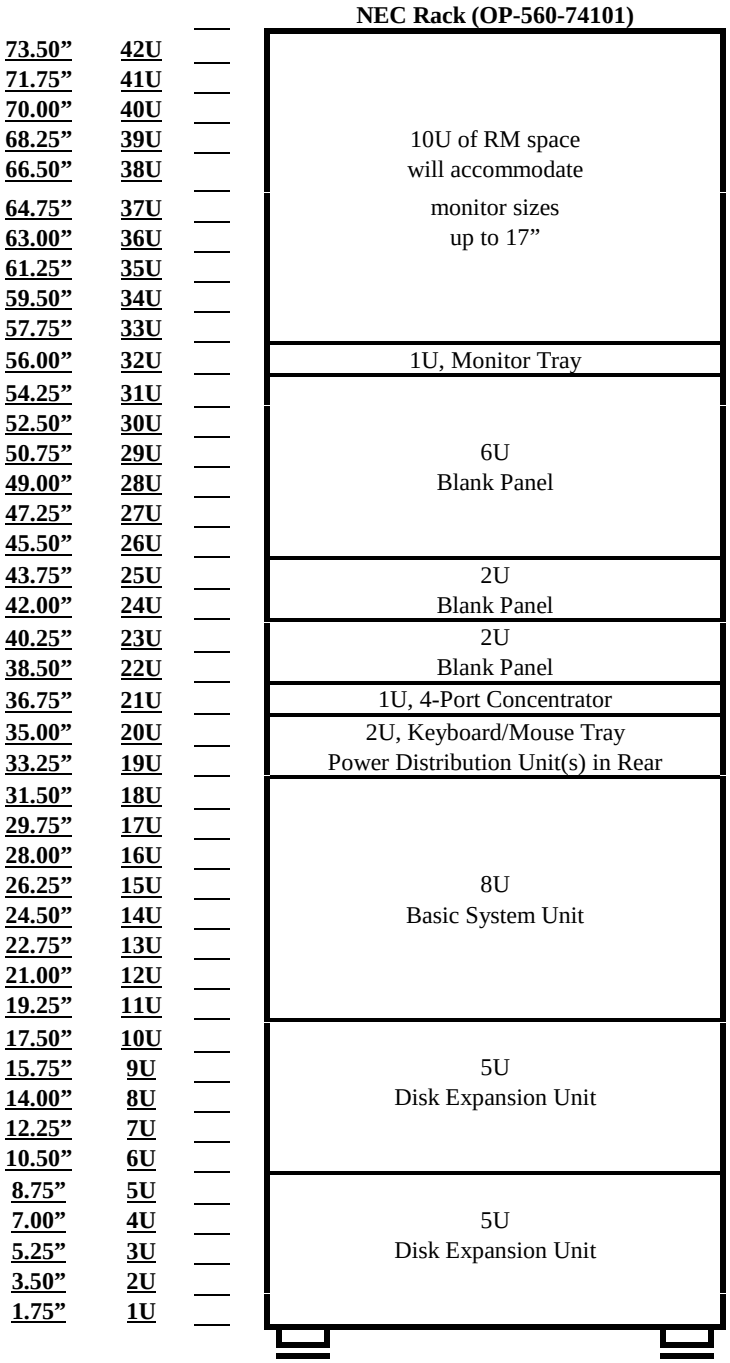


Key RM Component List

Part Number	Qty.
US-7A10-2005/2009S	1
OP-560-74107	1
OP-560-74108	1
OP-520-74103	1
OP-560-74101	1
OP-560-74106	1
OP-560-74104	2
OP-560-74103	1
OP-560-74110	2

Figure 10

Config.	Total Space in Us		PDU	BSU	DEU	Keyboard Tray	Monitor Tray	4-Port Conc.
	Required	Remaining	2U	8U	5U	2U	11U	1U
Figure 10	32	10	1	1	2	1	1	1

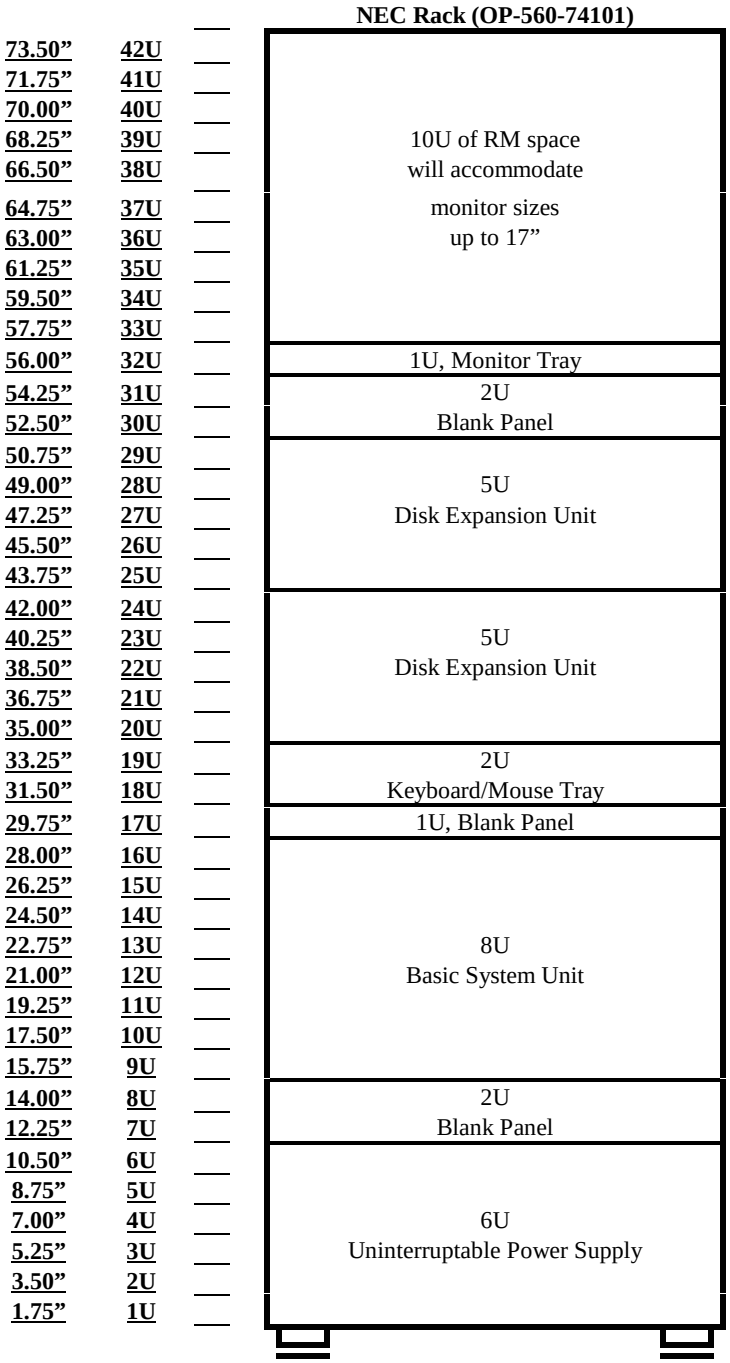


Key RM Component List

Part Number	Qty.
US-7A10-2005/2009S	1
OP-560-74107	1
OP-560-74108	1
OP-520-74103	1
OP-560-74101	1
OP-560-74109	1
OP-560-74106	1
OP-560-74104	2
OP-560-74110	2

Figure 11

Config.	Total Space in Us		UPS	BSU	DEU	Keyboard Tray	Monitor Tray	4-Port Conc.
	Required	Remaining	6U	8U	5U	2U	11U	1U
Figure 11	37	5	1	1	2	1	1	0

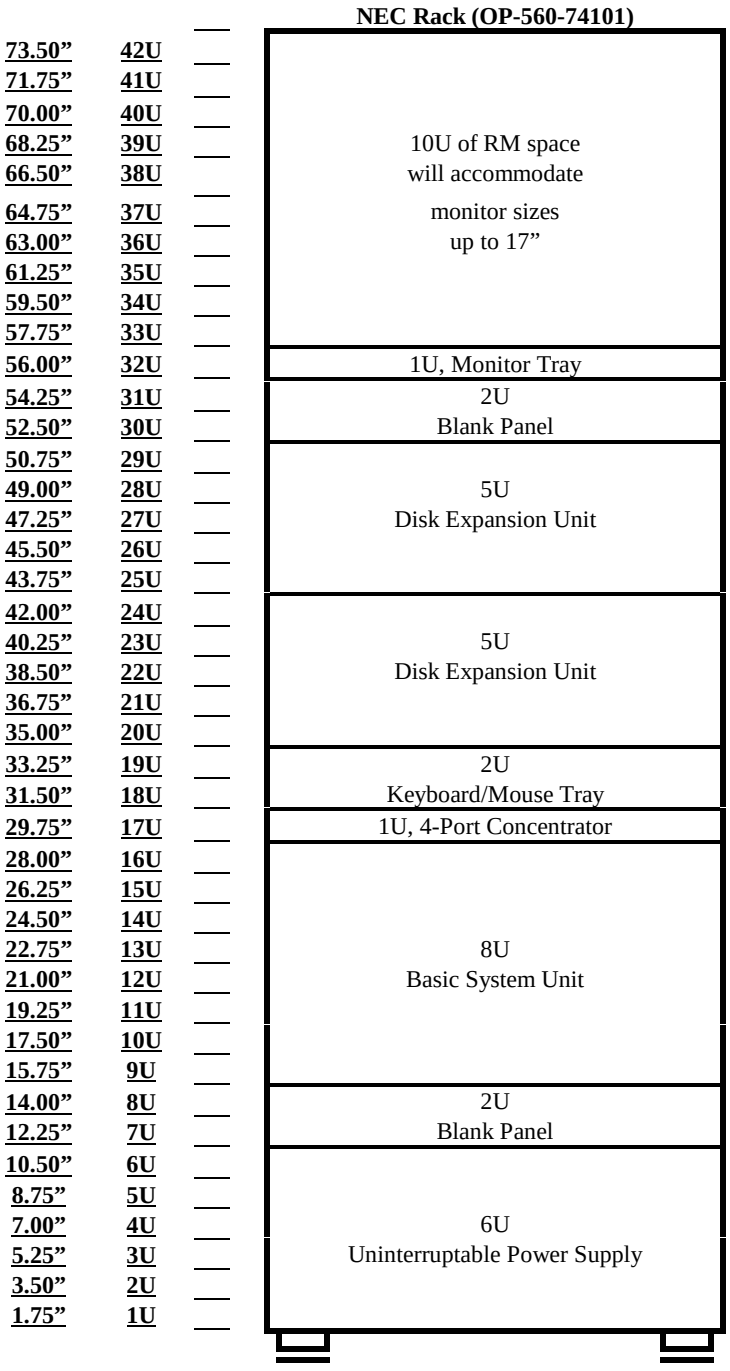


Key RM Component List

Part Number	Qty.
US-7A10-2005/2009S	1
OP-560-74107	1
OP-560-74108	1
OP-520-74102	1
OP-560-74101	1
OP-560-74104	2
OP-560-74103	1
OP-560-74110	2

Figure 12

Config.	Total Space in Us		UPS	BSU	DEU	Keyboard Tray	Monitor Tray	4-Port Conc.
	Required	Remaining	6U	8U	5U	2U	11U	1U
Figure 12	38	4	1	1	2	1	1	1

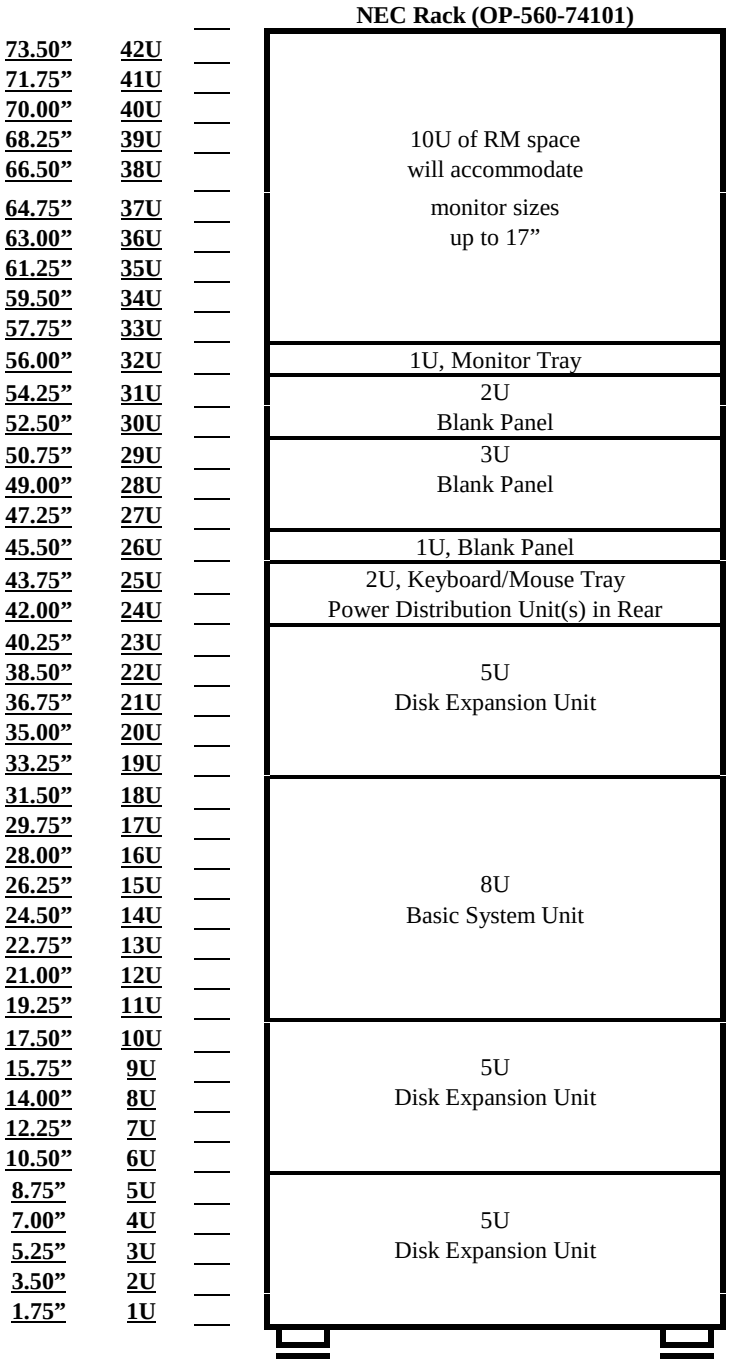


Key RM Component List

Part Number	Qty.
US-7A10-2005/2009S	1
OP-560-74107	1
OP-560-74108	1
OP-520-74102	1
OP-560-74101	1
OP-560-74104	2
OP-560-74109	1
OP-560-74110	2

Figure 13

Config.	Total Space in Us		PDU	BSU	DEU	Keyboard Tray	Monitor Tray	4-Port Conc.
	Required	Remaining	2U	8U	5U	2U	11U	1U
Figure 13	36	6	1	1	3	1	1	0

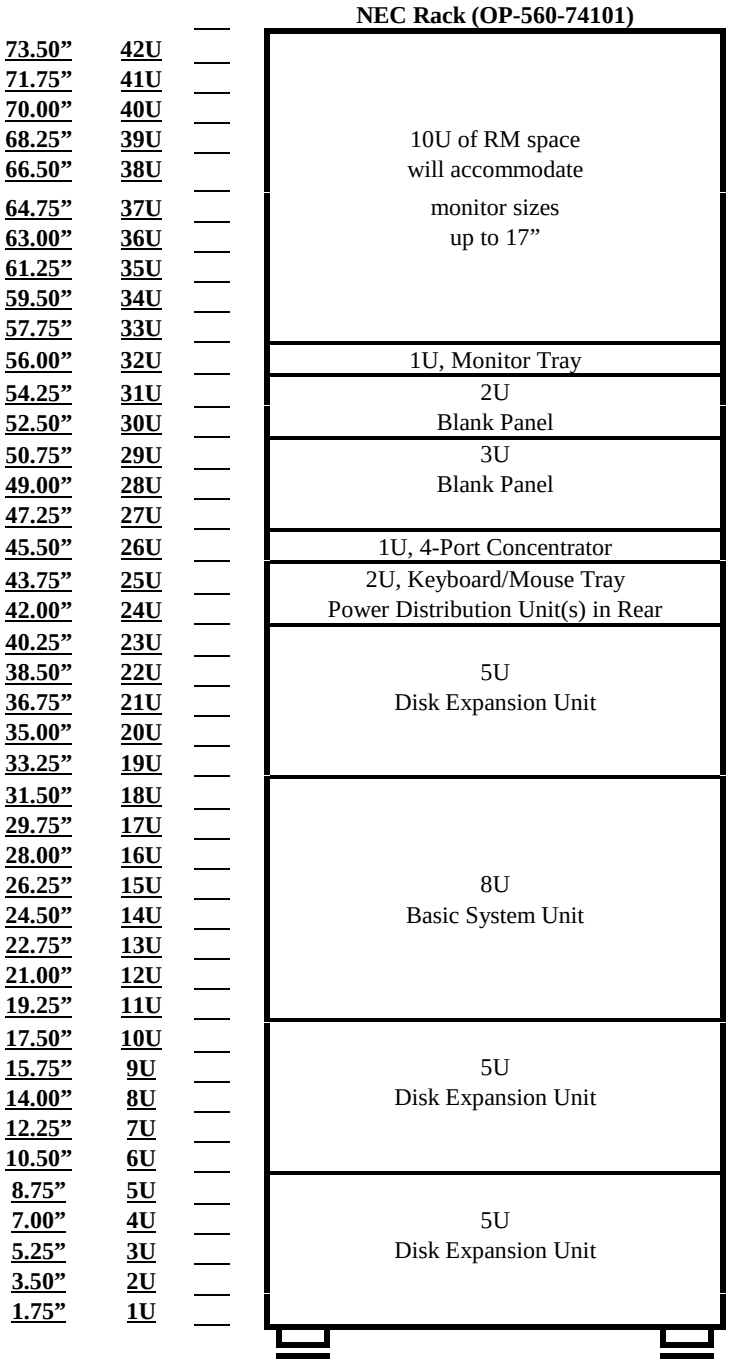


Key RM Component List

Part Number	Qty.
US-7A10-2005/2009S	1
OP-560-74107	1
OP-560-74108	1
OP-520-74103	1
OP-560-74101	1
OP-560-74110	3
OP-560-74105	1
OP-560-74104	1
OP-560-74103	1

Figure 14

Config.	Total Space in Us		PDU	BSU	DEU	Keyboard Tray	Monitor Tray	4-Port Conc.
	Required	Remaining	2U	8U	5U	2U	11U	1U
Figure 14	37	5	1	1	3	1	1	1

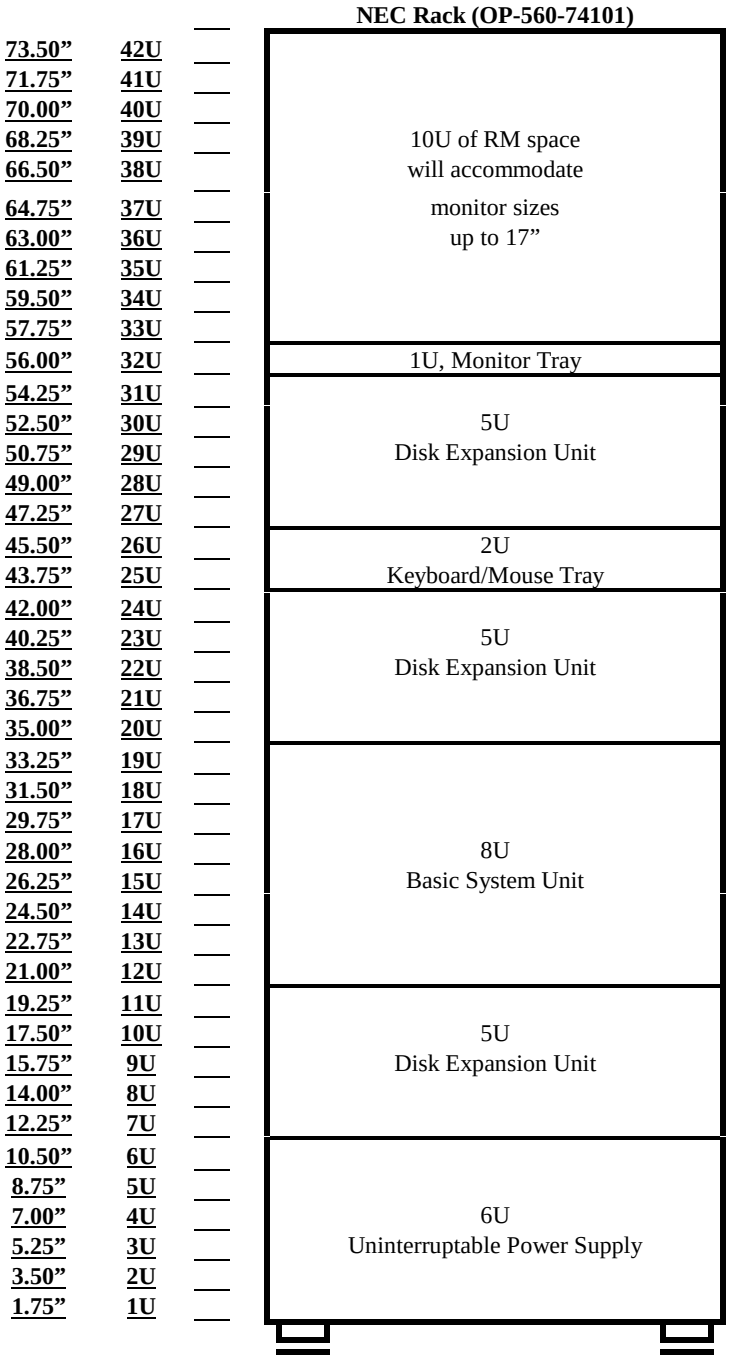


Key RM Component List

Part Number	Qty.
US-7A10-2005/2009S	1
OP-560-74107	1
OP-560-74108	1
OP-520-74103	1
OP-560-74101	1
OP-560-74110	3
OP-560-74105	1
OP-560-74104	1
OP-560-74109	1

Figure 15

Config.	Total Space in Us		UPS	BSU	DEU	Keyboard Tray	Monitor Tray	4-Port Conc.
	Required	Remaining	6U	8U	5U	2U	11U	1U
Figure 15	42	0	1	1	3	1	1	0

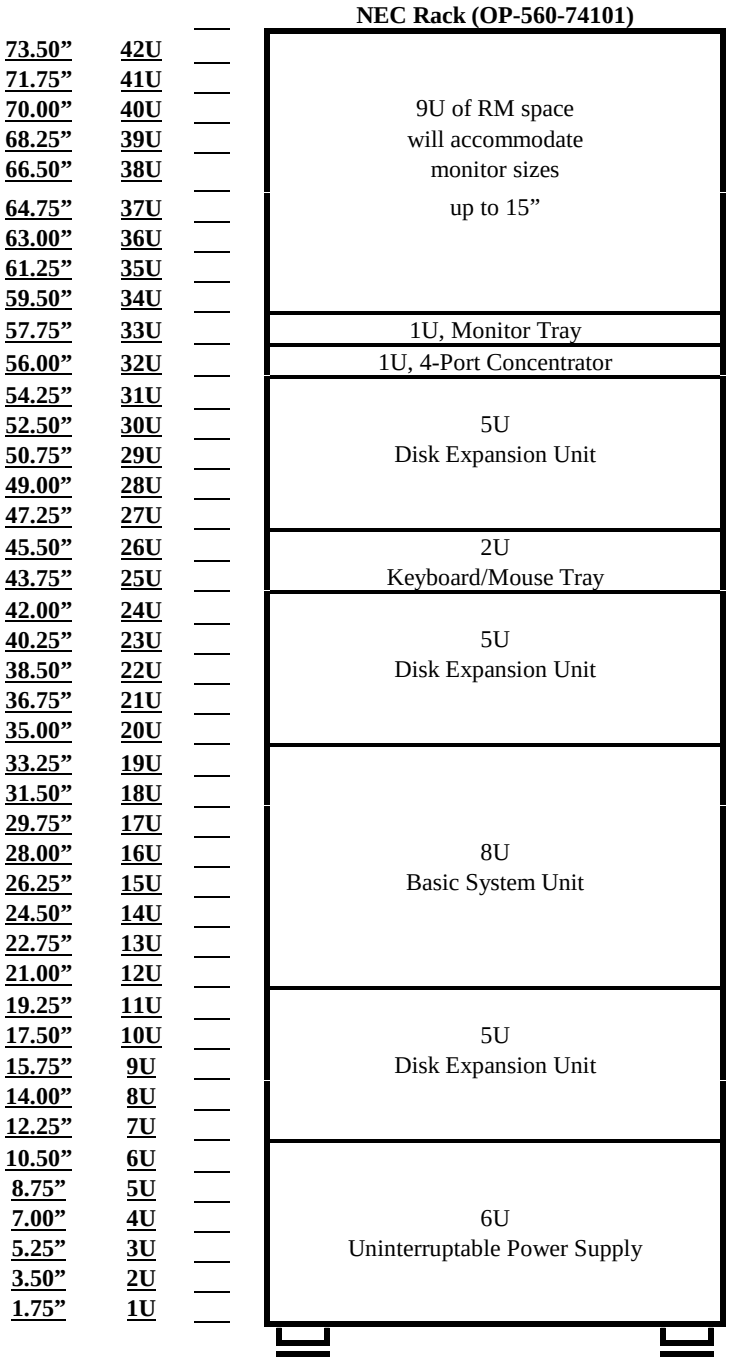


Key RM Component List

Part Number	Qty.
US-7A10-2005/2009S	1
OP-560-74107	1
OP-560-74108	1
OP-520-74102	1
OP-560-74101	1
OP-560-74110	3

Figure 16

Config.	Total Space in Us		UPS	BSU	DEU	Keyboard Tray	Monitor Tray	4-Port Conc.
	Required	Remaining	6U	8U	5U	2U	11U	1U
Figure 16	42	0	1	1	3	1	1	1

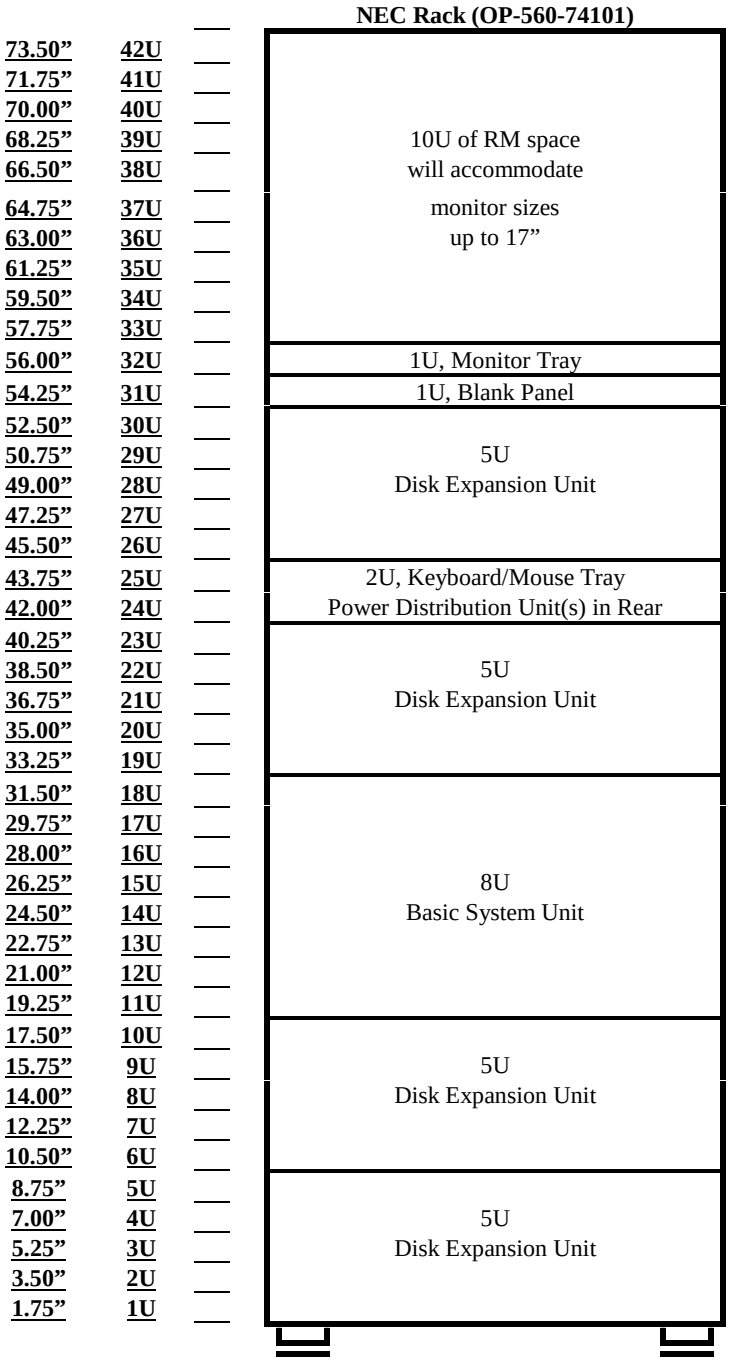


Key RM Component List

Part Number	Qty.
US-7A10-2005/2009S	1
OP-560-74107	1
OP-560-74108	1
OP-520-74102	1
OP-560-74101	1
OP-560-74110	3
OP-560-74109	1

Figure 17

Config.	Total Space in Us		PDU	BSU	DEU	Keyboard Tray	Monitor Tray	4-Port Conc.
	Required	Remaining	2U	8U	5U	2U	11U	1U
Figure 17	41	1	1	1	4	1	1	0

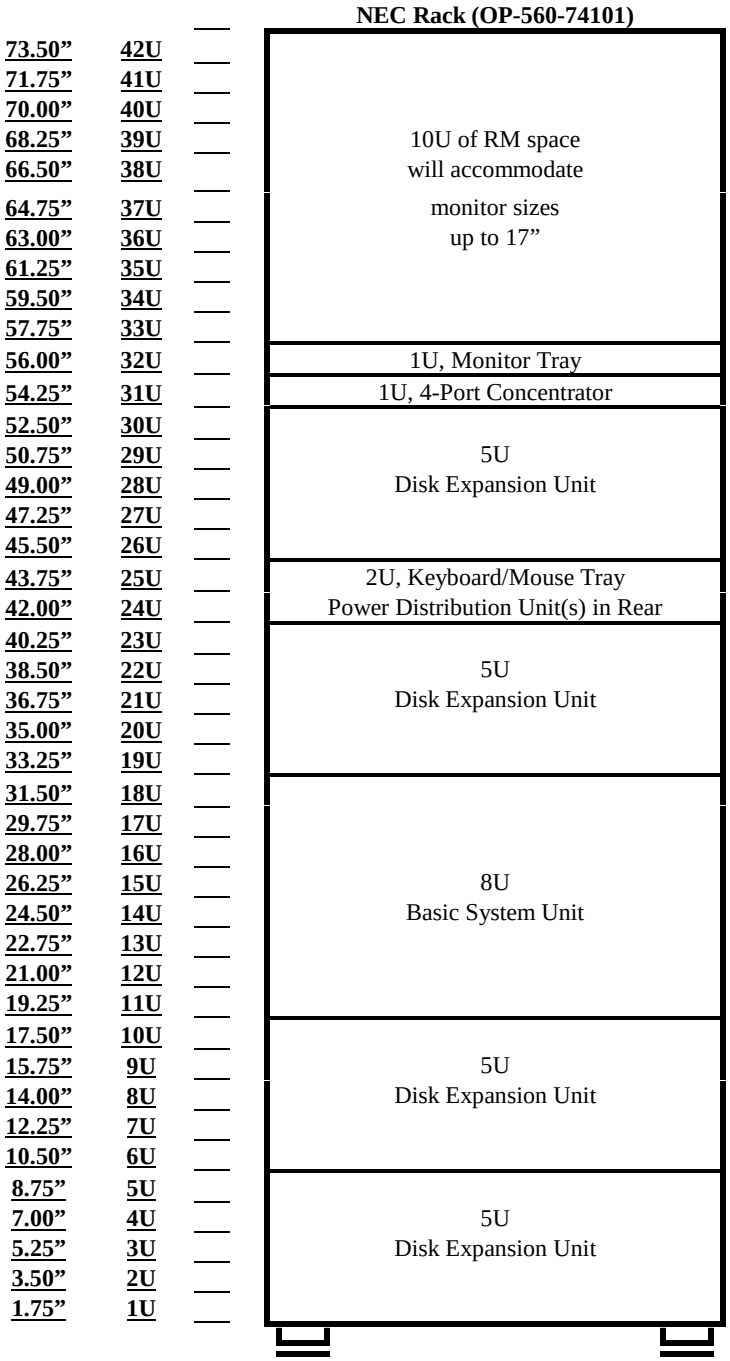


Key RM Component List

Part Number	Qty.
US-7A10-2005/2009S	1
OP-560-74107	1
OP-560-74108	1
OP-520-74103	1
OP-560-74101	1
OP-560-74110	4
OP-560-74103	1

Figure 18

Config.	Total Space in Us		PDU	BSU	DEU	Keyboard Tray	Monitor Tray	4-Port Conc.
	Required	Remaining	2U	8U	5U	2U	11U	1U
Figure 18	42	0	1	1	4	1	1	1

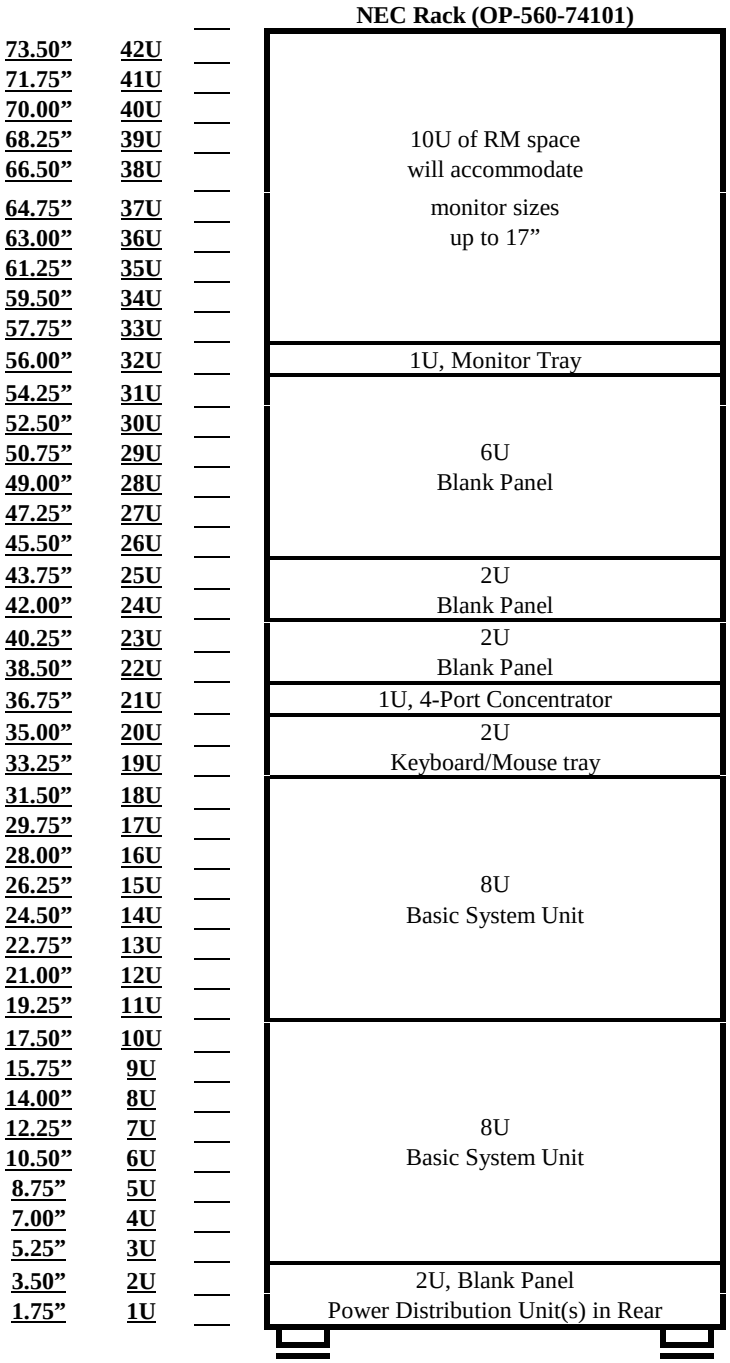


Key RM Component List

Part Number	Qty.
US-7A10-2005/2009S	1
OP-560-74107	1
OP-560-74108	1
OP-520-74103	1
OP-560-74101	1
OP-560-74110	4
OP-560-74109	1

Figure 19

Config.	Total Space in Us		PDU	BSU	DEU	Keyboard Tray	Monitor Tray	4-Port Conc.
	Required	Remaining	2U	8U	5U	2U	11U	1U
Figure 19	32	10	1	2	0	1	1	1

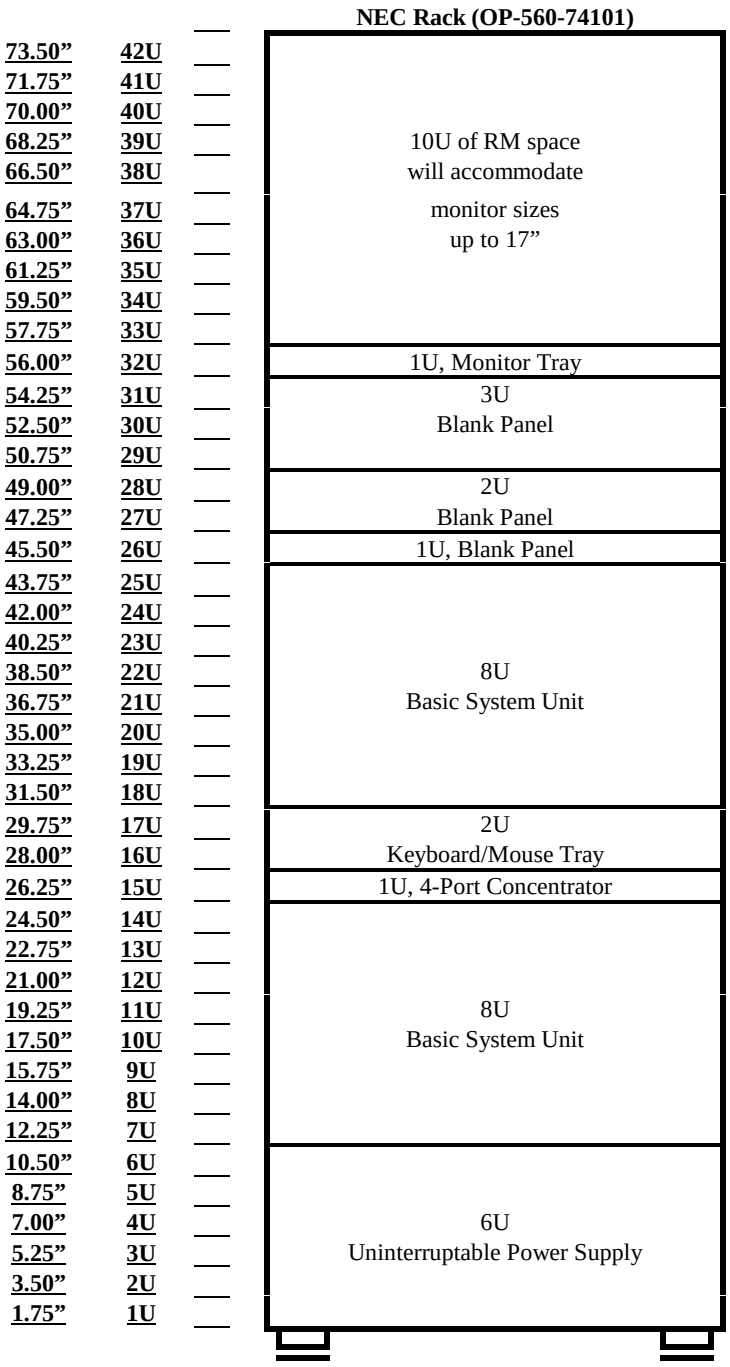


Key RM Component List

Part Number	Qty.
US-7A10-2005/2009S	2
OP-560-74107	1
OP-560-74108	1
OP-520-74103	1
OP-560-74101	1
OP-560-74106	1
OP-560-74104	3
OP-560-74109	1

Figure 20

Config.	Total Space in Us		UPS	BSU	DEU	Keyboard Tray	Monitor Tray	4-Port Conc.
	Required	Remaining	6U	8U	5U	2U	11U	1U
Figure 20	36	6	1	2	0	1	1	1

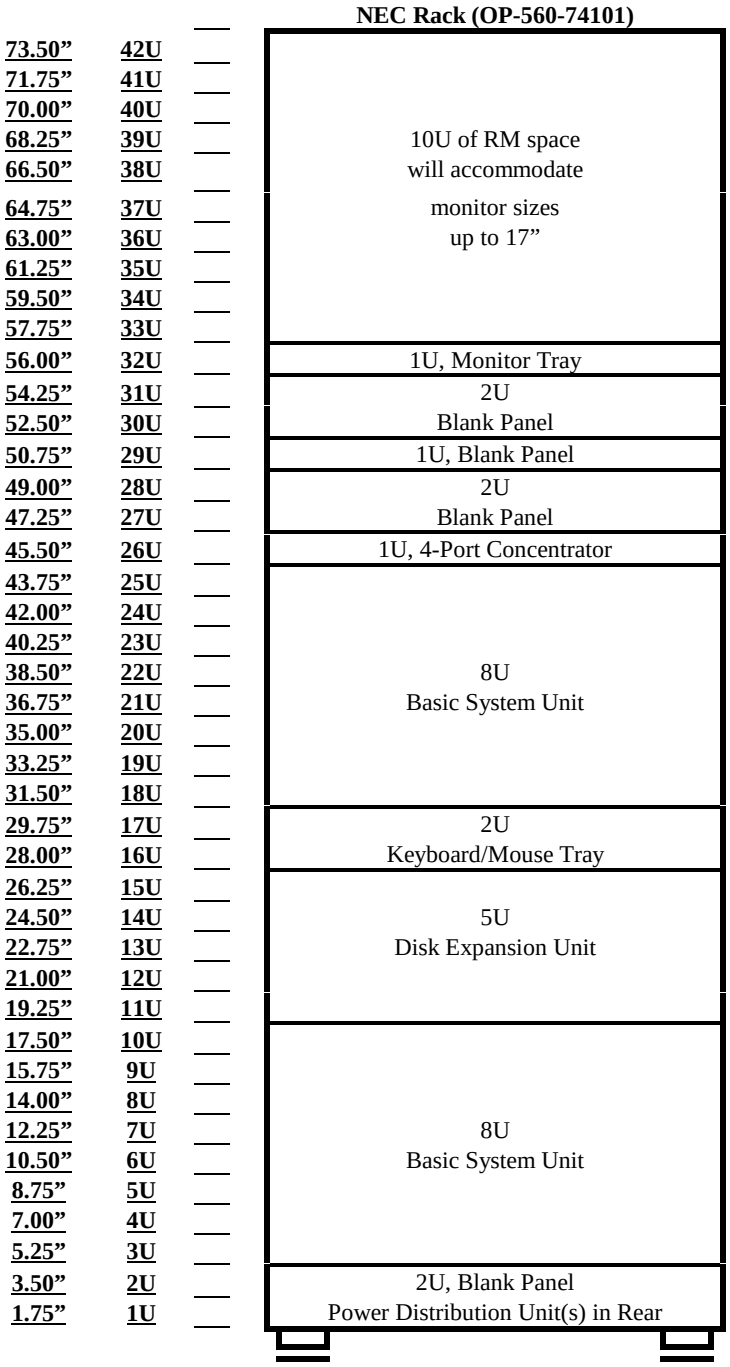


Key RM Component List

Part Number	Qty.
US-7A10-2005/2009S	2
OP-560-74107	1
OP-560-74108	1
OP-520-74102	1
OP-560-74101	1
OP-560-74105	1
OP-560-74104	1
OP-560-74103	1
OP-560-74109	1

Figure 21

Config.	Total Space in Us		PDU	BSU	DEU	Keyboard Tray	Monitor Tray	4-Port Conc.
	Required	Remaining	2U	8U	5U	2U	11U	1U
Figure 21	37	5	1	2	1	1	1	1

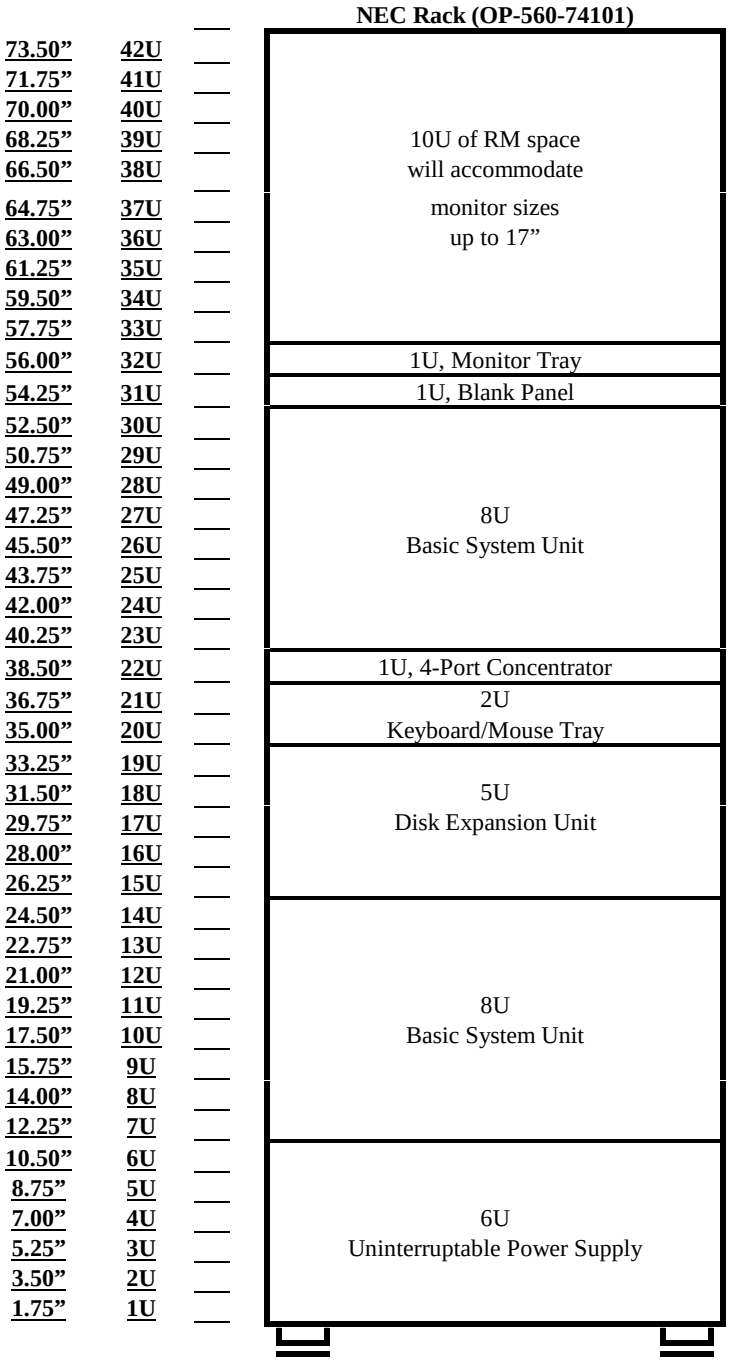


Key RM Component List

Part Number	Qty.
US-7A10-2005/2009S	2
OP-560-74107	1
OP-560-74108	1
OP-520-74103	1
OP-560-74101	1
OP-560-74104	3
OP-560-74103	1
OP-560-74109	1
OP-560-74110	1

Figure 22

Config.	Total Space in Us		UPS	BSU	DEU	Keyboard Tray	Monitor Tray	4-Port Conc.
	Required	Remaining	6U	8U	5U	2U	11U	1U
Figure 22	41	1	1	2	1	1	1	1

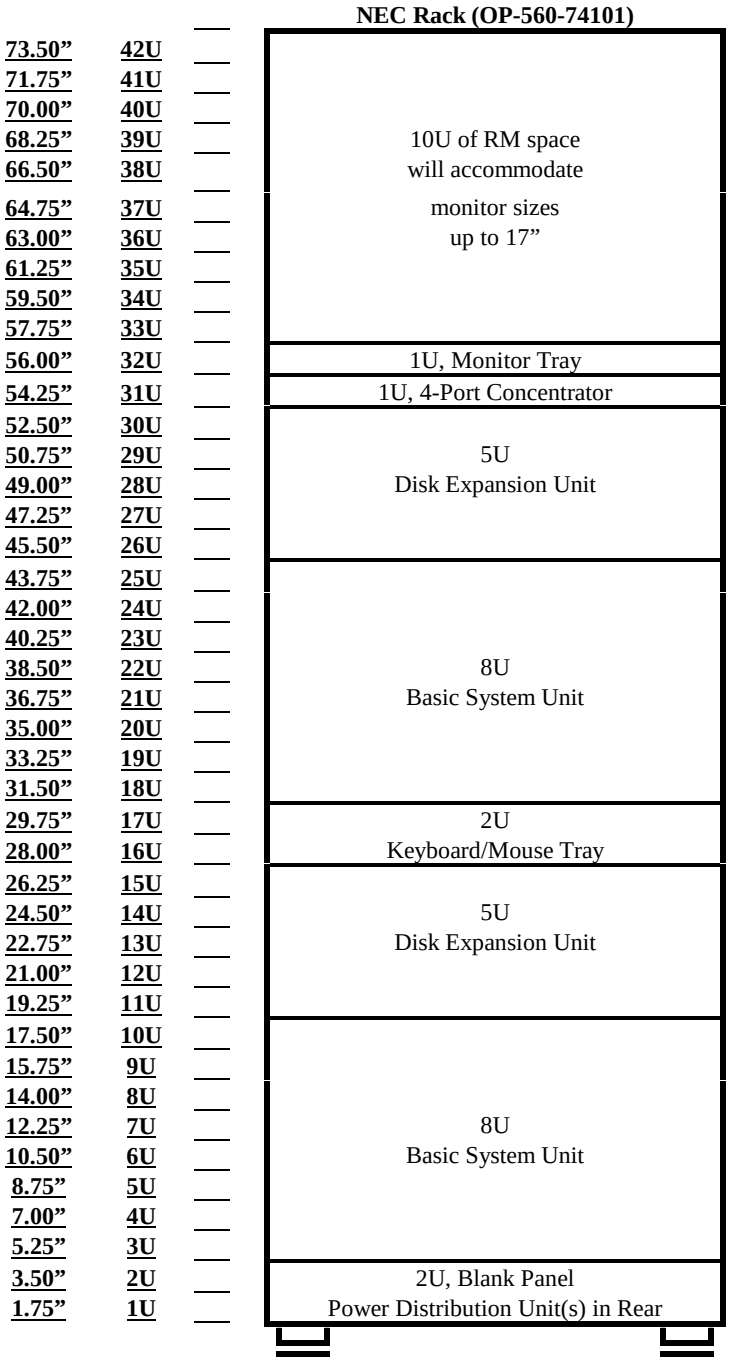


Key RM Component List

Part Number	Qty.
US-7A10-2005/2009S	2
OP-560-74107	1
OP-560-74108	1
OP-520-74102	1
OP-560-74101	1
OP-560-74109	1
OP-560-74110	1
OP-560-74103	1

Figure 23

Config.	Total Space in Us		PDU	BSU	DEU	Keyboard Tray	Monitor Tray	4-Port Conc.
	Required	Remaining	2U	8U	5U	2U	11U	1U
Figure 23	42	0	1	2	2	1	1	1

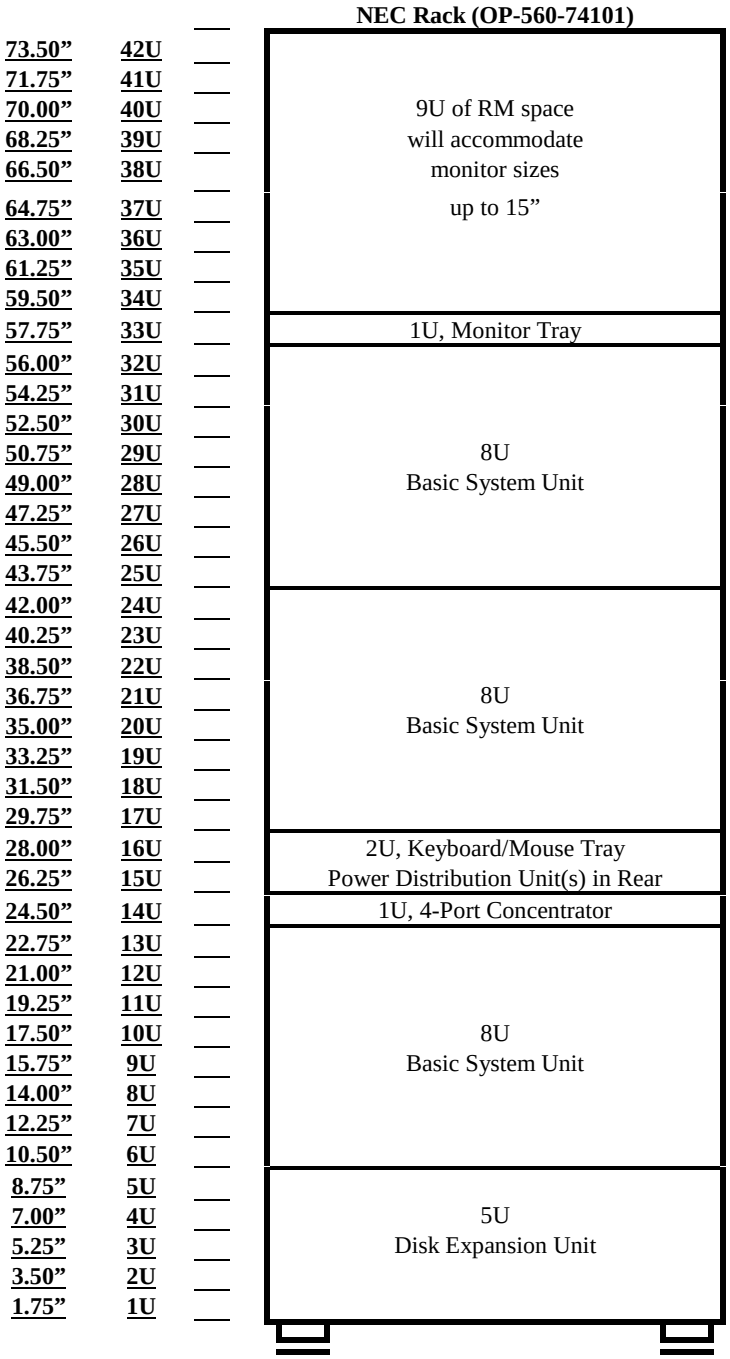


Key RM Component List

Part Number	Qty.
US-7A10-2005/2009S	2
OP-560-74107	1
OP-560-74108	1
OP-520-74103	1
OP-560-74101	1
OP-560-74109	1
OP-560-74110	2
OP-560-74104	1

Figure 24

Config.	Total Space in Us		PDU	BSU	DEU	Keyboard Tray	Monitor Tray	4-Port Conc.
	Required	Remaining	2U	8U	5U	2U	11U	1U
Figure 24	42	0	1	3	1	1	1	1



Key RM Component List

Part Number	Qty.
US-7A10-2005/2009S	3
OP-560-74107	1
OP-560-74108	1
OP-520-74103	1
OP-560-74101	1
OP-560-74109	1
OP-560-74110	1